

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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WITH
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PER ANNUM, BY POST, £1 4s.

MR JAMES H. CROFTS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER,
NO. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Banks, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

MINES INSPECTED.

BANKERS: CITY BANK, LONDON.—SOUTH CORNWALL BANK, ST. AUSTELL.

SPECIAL DEALINGS in the following, or part:—
50 Ashton, 22s. 50 Flagstaff, 2s.
50 Almada, 7s. 40 Glynn United, 100 Pestarena, 6s.
20 Canada Gold, 20 Herodfoot, £3 1s 3d. 200 Parys Copper, 20s.
35 Clementina, 50 Javali, 2s. 20 Richmond, 2s 12s. 6d.
20 Colorado, 36s. 50 Killifreth, 12s. 30 South Darren, 2s 11s 3d.
25 Devon Consols, £7 1/2. 25 Leadhills, £4 12s. 6d. 25 Tankerville, £6.
25 East Caradon, £3 1/2. 10 Mineral Corporation, 10 Van, £23 1/2.
10 East Lovell, £2. 20 Morfa, 15s. 20 West Ashton, £3 1/2.
25 East Van, 22 17s. 6d. 10 New Zealand Kapanga, 20 West Chiverton, £3 1/2.
50 East Roman Gravels, 12s. 6d. 25 Wheal Crebor, £8 1/2.
30 Eberhardt, 23 8s. 9d. 50 Panduro, 14s.

BUSINESS in all TIN Shares.

** SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

RAILWAYS—SPECIAL BUSINESS.

FOREIGN BONDS—SPECIAL BUSINESS.

Fortnightly accounts opened on receipt of the usual cover.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

ESTABLISHED 1842.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER,
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES
and MISCELLANEOUS SHARES of every description.

RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS.

TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.

Accounts opened for the Fortnightly Settlement

A Stock and Share List free on application.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
40 Ashton. 40 East Crebor. 30 Panulicillo, £5 1/2.
25 Bwich United, £3. 5 East Pool, £2 1/2. 25 Pateley Bridge, 18s. 6d.
50 Bodidris. 25 East Caradon, £3 1/2. 60 Parys Copper, 20s. 6d.
30 Blue Tent, £2. 50 East Roman Gravels. 15 Ruby, £4 12s. 3d.
5 Cape Copper, £3 1/2. 40 Frontino, 2s 19s. 6d. 20 Richmond, £10.
50 Clementina. 50 Killifreth, 2s. 6d. 15 Roman Grav., £13 1/2.
3 Car Brea, £2 1/2. 5 Great Laxey, £13 1/2. 25 South Darren, £3 1/2.
50 Colorado, 36s. 6d. 20 Great Holway. 50 South Crebor.
25 Canada Gold. 40 Gunnislake. 10 South Frances, £10 1/2.
10 Cook's Kitchen, £3 1/2. 15 Herodfoot, £2 19s. 6d. ex div.
2 Dolcoath, £5 1/2. 50 Hindston, 12s. 70 Tamar Silver-Lead.
100 Don Pedro, 16s. 6d. 100 Javali, 8s. 6d. 15 Tankerville, £8 1/2.
15 Drakewalls. 75 Killifreth. 3 Van, £23 1/2.
20 Derwent, £2. 25 Leadhills. 10 Wheal Pevor, £19 1/2.
30 Eberhardt, £3 8s. 9d. 15 Mellanear, £4 1/2. 20 West Ashton, £3 1/2.
20 East Van, £2 18s. 9d. 20 Marke Valley. 25 Wheal Grenville, £5 1/2.
25 East Chiverton, £2 1/2. 50 Nouveau Monde, 20s 6d. 100 Yorke Peninsula (pref)
15 East Lovell, £2. 40 New Quebrada, £3 8 9d. 20s.

IMPORTANT TO INVESTORS.

Large profits may be realised by the purchase of SHARES in SOUND well-selected MINES at present prices. Many of these are likely to advance considerably in market value during the next few months.

Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

The following Mines are particularly recommended:—Wheal Pevor, Wheal Grenville, Wheal Jane, West Feyer, Wheal Kitty, Drakewalls, East Lovell, Killifreth, East Caradon, Gunnislake (Clitters), Marke Valley, Derwent, East Chiverton, South Darren, Great Holway, West Ashton, and Panulicillo.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

A complete and reliable List of all the Leading Investments (published on the first of each month) may be obtained free on application to—

WILLIAM HENRY BUMPUS, SWORN BROKER.

OFFICES: 44, THREADNEEDLE STREET, LONDON, E.C.

BANKERS: THE NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

MESSRS. ENDEAN AND CO. are prepared to DEAL in the undermentioned SHARES, as follows:—

Llanrwst Ordinary... £2 1/2... £1 1/2 ... 1 Tam... £1 1/2... £1 1/2
do 10 p. cent. Prof. 2 ... 2 1/2 ... South Wheal Crebor 1 ... 1 1/2

WANTED, 700 BODIDRIS Shares, for cash, in one lot. State lowest price. Dealers and others wishing to buy or sell shares in the above will find it to their advantage to communicate with—

Messrs. ENDEAN AND CO., STOCK AND SHARE DEALERS,

85, GRACECHURCH STREET, LONDON, E.C.

MESSRS. ENDEAN AND CO., STOCK AND SHARE

DEALERS, 85, GRACECHURCH-STREET, LONDON, E.C., strongly

recommend shares in the LLANRWST LEAD MINING COMPANY (LIMITED), for a speedy and substantial rise in price. No mine in the Llanrwst district can equal it either as regards present value or future prospects. Shareholders in this mine will do well to average the cost of their shares by picking up every share they can get at 11, which is 50 per cent. discount. Those who have not yet taken any of the company's 10 per cent. Preference Shares should at once do so. We have recently had Llanrwst mine inspected by Mr. G. Barker, M.E. His report is published in *extenso* in last week's *Mining Journal*. He states that without counting upon the lodes in the 14 below adit, and on which he reported in 1877, there are 465 tons of ore discovered, worth, at 12s. per ton, £8,600.

The ordinary shares are now to be had for 11, each. This is only 30,000, for the mine. The preference capital issued is barely 2000. The mine is, therefore, capable of returning 100 tons of lead monthly, and will doubtless do so. This will enable the company to pay the 10 per cent. due on its preference shares, and leave a balance which would enable them to pay 15 per cent. on the ordinary shares at their present price of 11. If there are any shareholders foolish enough to sell their shares for less, so much the better for those who are shrewd enough to buy them. The fact that £8,600 worth of lead has been already discovered above the adit is in itself sufficient proof that the Llanrwst is a mine second in its prospects to no other in the United Kingdom.

MR. GEORGE BUDGE, STOCK AND SHARE DEALER,
9, GRACECHURCH STREET, LONDON, E.C. (Established 26 years).
ALL BUSINESS TRANSACTED FREE OF ANY CHARGE FOR
COMMISSION.

Notice to Investors and Speculators.

MR. BUDGE has SPECIAL DEALINGS in—
45 Bwich United. 100 Exchequer, 7s. 30 Penhalls.
70 Birdseye Creek. 15 Frongoch, £4 1/2. 100 Pestarena, 7s.
35 Bedford United, 9s. 50 Glencroy. 30 Phoenix.
50 Bodidris. 20 Gunnislake Clit., £2. 80 Parys Copper.
30 Canadian Cop., 28 6d. 20 Grogwinion, £4 1/2. 10 South Frances, £12.
200 Chapel House. 200 Gold Run, 4s. 3d. 70 South Crebor.
50 Cambrian. 15 Herodfoot. 25 South Darren, £3 1/2.
25 Devonport and Tiver- 30 Hindston, 12s. 6d. 65 Tamar Silver-lead.
ton Brewery. 100 Llanrwst, 18s. 6d. 40 West Ashton.
65 Don Pedro, 16s. 3d. 40 Marc Valley, 32s. 20 Wh. Grenville, £5 3 6s.
50 Derwent. 70 Nouveau Monde, 20s. 15 Wheal Kitty, £3.
40 East Caradon, £3 1/2. 50 North D'Ershy, 20s. 25 Wheal Uny.
BUYERS or SELLERS of any of the above, or holders of any Stocks or Shares not readily marketable, will do well to apply to Mr. BUDGE.

NOTICE OF REMOVAL.

MR. PETER WATSON'S OFFICES will in future be at—
18, AUSTIN FRIARS,
OLD BROAD STREET,
LONDON, E.C.,
Being larger and much more convenient Offices than at—
54, OLD BROAD STREET.

MESSRS. PETER WATSON AND CO.'S BRITISH AND FOREIGN MONTHLY MINING NEWS—STOCK AND SHARE INVESTMENT NOTES—MINES. MINERALS, AND METAL MARKETS—SHARE LIST, NO. 812, VOL. XV., for NOVEMBER month, will be published on WEDNESDAY next, and sent to customers on application, Annual Subscription..... 5s. | Single Copy..... 6d.

MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS,
OLD BROAD STREET,
LONDON, E.C.

STOCK AND SHARE MARKETS.

Prices of STOCKS and SHARES in RAILWAYS, BANKS, ENGLISH and FOREIGN GOVERNMENT SECURITIES, GAS, MINES, INSURANCE, and other Stock Exchange Securities, and various important information forwarded on application to—

MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS,
OLD BROAD STREET,
LONDON, E.C.

UNITED STATES AND COLONIAL MINES.

IMPORTANT INFORMATION REGARDING THE ABOVE. BUYER and SELLER of SHARES at the close Market Price of the day. SHAREHOLDERS and INVESTORS may rely on all business being punctually and faithfully carried out.

A DAILY LIST OF PRICES sent (free) on application, either personally or by post. BANKERS: THE ALLIANCE BANK (Limited).

MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS,
OLD BROAD STREET,
LONDON, E.C.

M. ALFRED E. COOKE, DEALER at NET PRICES in EVERY DESCRIPTION of STOCKS and SHARES,

76, OLD BROAD STREET, LONDON.
ESTABLISHED 1853.

SPECIAL.—ALL SHARES selected and recommended by Mr. COOKE have risen CONSIDERABLY in PRICE. INVESTORS can now be supplied with SHARES DIRECT on application, which will almost certainly realise 100 to 200 per cent. profit in a very short time.

IMPORTANT.—Investors following Mr. COOKE's advice have made LARGE SUMS of MONEY. LOW PRICED LEAD SHARES should NOW be PURCHASED. Lead will probably advance many pounds per ton. There is no cheaper LEAD SHARE to be bought than NORTHERN D'ERESBY MOUNTAIN, at 20s. fully paid.

Mr. COOKE has recently visited the Mine, and NEVER SAW IT LOOKING SO VALUABLE. Specimens from the workings can be seen at his offices.

NOTE.—THE EXPENSES of any independent Inspector will be REFUNDED should his report not agree with those favourable reports already made by eminent authorities.

ALL BUSINESS transacted FREE of commission. SPECIAL BUSINESS in ALL TIN, COPPER, and LEAD SHARES at CLOSEST POSSIBLE PRICES.

STOCK EXCHANGE BUSINESS DONE ON BEST TERMS.

ALFRED E. COOKE,
76, OLD BROAD STREET, LONDON.

(Adjoining the Stock Exchange and Mining Markets.)

STOCKS AND SHARES.

FOREIGN BONDS, TELEGRAPHHS, TRAMWAYS, RAILWAYS, AND OTHER LEADING SECURITIES.

MRS. JAMES STOCKER, STOCKBROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1848.

SPECIAL BUSINESS in the following:—

Bodidris.	Herodfoot.	South Frances.
Cardiff and Swansea.	Hulfafal.	Tankerville.
Chontales.	Leadhills.	Van.
Devon Consols.	Last Chance.	West Ashton.
Don Pedro.	Mark's Valley.	West Chiverton.
East Chiverton Consol.	Nouveau Monde.	West Wheal Frances.
East Lovell.	North Penstruthal.	West Pevor.
East Van.	Pateley Bridge.	Wheat Jane.
East Caradon.	Roman Gravels.	Wheat Pevor.
East Crebor.	Richmond.	Wheat Grenville.
Flagstaff.	Ruby.	Wheat Uny.
Grogwinion.	South Darren.	

BANKERS: LONDON AND WESTMINSTER.

MRS. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPS GATE STREET, LONDON, E.C.

Can SELL the following SHARES at prices annexed:—

40 Bedford United, 10s. 3	25 Glenroy, 17s.	100 Ross Grande, 3s. 9d.
50 Cambrian, £2.	15 Herodfoot, £2 18s. 9d.	20 Ruby Silver, £4 11s 3d
20 Colorado, £1 1/2.	30 Hindston, 11s. 6d.	25 So. Crebor, £1 5s.
15 Devon Consols, £2.	20 Leadhills, £4 12s.	20 So. Darren, £3 11s. 3d
20 Don Pedro, 16s. 3d.	25 Nouveau Monde, 20s. 3	30 Tamar Silver-Lead.
20 East Caradon, £3 2s. 6	10 Minera, £11 1/2.	50 Teconia, 6s. 6d.
20 East Crebor, £1 5s.	20 Panulicillo, £5.	50 Van United and Glyn,
25 East Lovell, £2.	23 Pateley Bridge, 17s. 6	13s. 9d.
15 East Van, £2 1/2.	30 Pestarena, 6s. 3d.	20 W. Ashton, £3 1/2.
20 Eberhardt, £3 7s. 6d.	20 Port Phillip, 9s. 9d.	20 W. Chiverton, £3 13 3/4
30 Flagstaff, £1 4s. 3d.	10 Roman Gravels, £2 1/2.	20 W. Pateley Br., £2 22 3/4

BWLCH UNITED MINES—SPECIAL BUSINESS in these shares.

MRS. W. B. COBB, 29, BISHOPS GATE STREET,
LONDON, E.C.

BWLCH UNITED.—There is no mining investment on the market equal to this. I can strongly recommend the shares for a rise in price and dividends.

BANKERS: ALLIANCE BANK (Limited).

MRS. JOHN L. M. FRASER,
(Fourteen Years at the Great Miners Mines)

Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES*—No. CXXXIX.

BY J. CLARK JEFFERSON, A.R.S.M., W.H.Sc.,

Mining Engineer, Wakefield.

(Formerly Student at the Royal Bergakademie, Clausthal.)

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METHODS OF WORKING WITHOUT ATTLE PACKING.

PILLAR WORKING.

In the last two lectures we have given examples of the working of thick seams. A consideration of the examples we have given will show that the occurrence of seams of 10 yards in thickness is not always a matter for unqualified congratulation, especially for the colliery proprietor. Most ground owners will be inclined to demand either a heavy royalty per acre, or in case the royalty is paid on the ton, to require that a given amount of coal shall be got per acre. Where the mineral belongs to the Government, as in Germany and France, the Government inspectors will require on behalf of the country as exhaustive a working as possible. With seams of the thickness of 10 yards the ratio of mineral got to the total amount in the seam is much less than where the thickness is only 3 or 4 yards at most. One of the first proposals to obtain a greater proportion of the mineral in thick seams was to work such deposits in two, or at most three, stages, each by the longwall method; working out the uppermost stages completely, and allowing the debris in the goaf (gobbin) two or three years in which to settle and to become compressed before working the lower stage. This supposes that in that length of time, and under the enormous surface weight, the broken ground will become in some measure consolidated, so as to form a tolerably good roof. The success of this method is, therefore, in the first place dependant on the nature of the roof. One of the most favourable strata for this purpose would seem to be a sandstone roof, which only breaks in very large pieces, covering large areas; or argillaceous strata of a not too plastic nature, which after compression will possess sufficient strength to stand for some distance unsupported. It is doubtful, however, in the case of most strata whether pressure alone will be sufficient to squeeze the broken portion of rocks so close together as to bring them sufficiently near for the force of cohesion to bind them again into one solid mass. Although pressure has undoubtedly been one of the chief agents in consolidating the strata into solid rock masses, still it must be owned that the mode and circumstances of stratification have been in most cases a not less necessary agent; and in considering this proposal for the working of a thick seam one must consider in the first place whether the substance of the roof is suitable for reconsolidation. In the case of non-plastic strata it may happen that the surface weight may compress the debris into a solid mass, but that this in all probability will not be very cohesive will be evident to all acquainted with the difficulties of timbering the roofs of mines, or even levels, in the neighbourhood of faults or troubles, where the broken ground has been reconsolidated by pressure, but remains without cohesion. The case of a good sandstone roof would seem more favourable when the roof during the working of the first stage breaks only at very considerable intervals, and over a great surface. Even where the roof thus formed possessed sufficient cohesion to allow of the lower stage being worked without much difficulty, in many cases the liability of the small coal (left in the goaf whilst getting the upper part of the seam) to spontaneous combustion presents the danger of fire, which cannot afterwards be so readily dammed back. Of course the working away of the lower portion of the seam first by the method of longwall is out of the question, since the upper portion of the seam when it broke down would be so broken as to be worthless for working afterwards. Unless there is sufficient material at hand to pack the goaf tight, so as to form a regular bed, on which the upper seam rests, the elasticity of the coal allowing it in many cases to bend down by the amount by which the packing shrinks when compressed by the weight of the superincumbent ground. This proposal of working such seams in two stages, each being got by the longwall method will generally effect the complete exhaustion of the upper stage, but a considerable portion of the lower stage is generally sacrificed, especially if one of the middle seams is made to serve as a temporary roof, to which the working faces are wooded, the coal being got out of the goaf as it falls on robbing the props.

The working of thick seams in two stages is not always confined to working each stage by the longwall method. In many cases the lower stage is worked out by pillar working. Where the lower stage is worked by pillar and stall working both the pillars and the stalls are comparatively small, and one of the middle seams is left as a roof when driving the stalls and getting the pillars, being afterwards got in the goaf on borrowing the timber. With this arrangement very favourable results are often obtained. This latter proposal is better suited for seams with a considerable inclination than the former.

The method of working the 10-yard seam in Staffordshire that we have described is so unmethodical that it scarcely merits the name of a method of working. Its use seems only advantageous to a lessee with a comparatively light tonnage royalty and a comparatively short lease.

The most rational method yet proposed seems to be that of pillar working, which we have described as being used in the thick seams in Upper Silesia. This method seems to have several advantages. Practically speaking, the whole of the coal is got, since the pillars are made so small that they can be worked away rapidly, slice for slice, before the roof has time to weighten so as to come down, and it is from this portion of the work alone that there is any liability to loss of coal. Comparatively little timber is required, though of great length and exceedingly strong, and danger to the miners from falls of roof is reduced to a minimum. As the full thickness of the seam is removed at once, and the roof untouched even when driving the stalls, the timbering is put up to solid unbroken roof, which therefore holds better.

DIAGONAL PILLAR WORKING.

This method of working is generally chosen to admit of advantage being taken of the cleat of the coal, and also where it is found advisable to transfer the corves from the working face direct to the main level, without having first to be lowered by means of a jig-brow, so that all the mechanical arrangements on that score are avoided. The diagonal arrangement of the pillars, and consequently of the stalls, being such that the corves can be transported down the diagonals by hurriers, whilst horses or brakes would be required to let down the coal if the stalls or the man jig-brows were driven on the full rise of the seam. We have pointed out in a previous lecture the unsuitability of diagonal roads where the inclination of the seam exceeds 15°. Those remarks apply with still greater force to the driving of diagonal stalls in seams which have a considerable inclination, so that the method of diagonal pillar working is only suited for seams having an inclination under about 15°. The stalls are generally set off so as to give a rise of 1 in 20, or about 3°. In the Saarbrücken district the inclination is sometimes much greater, the coal is then transported down the stall in sledges.

The following is a description of diagonal pillar working, as practised in the Saarbrücken district. The seam is opened out in divisions by means of levels and diagonal roads. Between each level the workings are opened out by means of a series of diagonals, about 33 yards apart. The diagonals are driven 5 ft. in width, till they have advanced 11 yards from the main level. At this point the diagonals are enlarged to give a working face 11 yards in width, so that pillars 22 yards in thickness remain between the stalls thus opened out. The lower end of the stall, at its enlargement, is parallel with the main level, so that a safety pillar, 11 yards thick, is left to protect the main level. The stall is packed in the centre, so, however, as to leave a roadway, 5 ft. in width, on both sides of the gobbin, between the pack and the coals. This road is likewise

formed on the lower end of the stall, between the low end of the pack and the top side of the 11 yards of coal left as a safety pillar to protect the main level. This lower part of the road serves to connect the roadways on both sides of the pack. In this manner the stall is driven forward with the continuation of the pack, and the cork roads, up to the two sides of the safety pillar left to protect the level next above. Since the ventilation has but one opening for the inlet and outlet to the stall it becomes necessary as the stall advances to thirl through the pillar, so that the brattice in the first 12 yards length of the stall, where it is only 5 ft. in width, can be removed; and the air current entering from the main road advances up one side of the pack to the stall face, and returns down the other side of the pack as far as the slit through the pillar, through which the air-current passes into the next stall. When the stalls have reached the boundary a piece 11 yards in width is covered off, and driven across into the next stall, leaving a safety pillar to the low side of the level next above. The pillars are now worked backwards (down hill) to the level below, the coal being transported from one side of the pillar down one road, and that from the opposite side of the pillar down the adjoining road. The above dimensions for the stalls and pillars are not given as used in all cases, the sizes of the stalls and pillars being regulated according to the same circumstances and conditions as we have mentioned hold good in the case of strike pillar working. The mode of working out the pillars either by working on the full width of the end of the pillar (as above given 22 yards) or by working out slices of a narrower width across the pillar from one side to the other, or from two opposite sides towards the centre, depends on the thickness of the seam and the nature of the roof. In working the Heinrich seam near Grosswald, which is 5 ft. 6 in. in thickness, and dips upwards of 12°, the levels are driven 70 to 80 yards apart. The diagonal roads, which are driven every 46 ft. to 58 ft. (15 yards to 19 yards) apart, are set off so as to rise 4° (or 1 in 16), and are driven 6 ft. in width for a distance of 7 yards to 8 yards from the main roads, after which they are enlarged to 20 ft. to 26 ft. in width, leaving pillars between them 26 ft. to 32 ft. in thickness. The roof generally stands good until the pillars are worked back, so that the centre portion of the stalls is not packed as we have above described. Where the roof will not stand up in the stalls for a width of 7 yards to 9 yards the stalls are made narrower 3 yards to 4 yards in width, the pillars being left correspondingly thicker. The pillars are worked away by cross slices 7 to 9 yards wide, the working away of the second slice commencing when the first has been worked out.

The inconvenience which arose from the acuteness of the angle between the diagonals and the levels when the inclination was considerably led to a general modification in the arrangement of the road in the case of the steeper seams. From the main level, which runs approximately N. 25° E., diagonal roads are started to go about N. 60° E., so as to rise between 3° and 4° (1 in 20 to 1 in 16), at such distances apart as to enclose between 70 and 80 yards width of coal between them. From the diagonal roads the diagonal stalls are started of the usual width, and the usual distance apart, to rise 3° or 4° in the opposite direction—i.e., the course of the diagonal stalls from the diagonal roads will be S. 10° E., so that the acute angle between the stalls and the roadway (which is driven in a diagonal direction) is upwards of 70°, or twice as great as if the seam had been opened out by a series of levels, as given above. A parallel covering-off road is sometimes driven 7 to 8 yards from the diagonal, from which the stalls are first started of the full width, a roadway 6 ft. wide forming the continuation of the stall gate to the main roadway. The working out of the pillars advances towards the rise. Most of the mines in the Saarbrücken district are served by day holes or adits, driven from the sides of the hills. Many of the seams in South Wales are worked in a similar manner to that just described,

THE SYDNEY INTERNATIONAL EXHIBITION—No II.

[FROM OUR SYDNEY CORRESPONDENT.]

Turning from New South Wales to Queensland we have another set of exhibits of which both Australia and Great Britain may well be proud. The vastness of its area may be understood when it is stated that it is 11 times the size of all England and Wales together, with country enough left over to nearly make a second Scotland, and that the great Indian Empire is only one-fourth larger than Queensland. The estimated area is 669,520 square miles, and the population is only about 200,000. Although the mineral resources of Queensland are enormous, and will no doubt be hereafter developed to the great advantage of both local and British capitalists, but the most prominent portion of the exhibit is undoubtedly the timbers, ornamental as well as useful, which is seen in all parts of the court. Mr. Walter Hill, the colonial botanist, show 232 beautiful specimens of timber indigenous to the colony, and which at Vienna, Paris, and Philadelphia were recognised as adaptable not only for ordinary commercial purposes but also as possessing qualities peculiarly suited for various climates. The *Eucalyptus* is, of course, well represented in its many varieties; red cedar, found in the scrubs, extending from Brisbane to the far north, is also to be found. Each sample has full particulars attached as to the varied uses to which it can be put, the sizes, and the description of country where it is to be found. Of late years there has been a wholesale destruction and spoliation of timber going on all the rivers of northern and southern Queensland, and with a view to prevent this action is being taken by the Government, and some sort of legislation will probably be shortly enacted. The initiation of a system of forest conservancy has been already commenced by the planting of about 30 acres of land in the vicinity of Brisbane, as a nursery in which thousands of young plants are being cultivated. They will afterwards be planted out, and this system requires to be carried on throughout the colonies if any permanent good is to result. The specimens shown by Mr. Hill, and which are splendidly arranged, are red cedar, sour plum, rose apple, pencil cedar, white cedar, the bunya bunya, varieties of pines of all kinds, several oaks, ashes, satinwood, pomegranate, yellowwood, blackbut, gums of all kinds, red mahogany, tulip trees, beefwood, cherry trees of several kinds, and also beeches, musk, native olive, blood wood, coach wood, coral trees, and a large number of beautiful specimens of timber, which are well suited for veneering. There are also 24 kinds of scantlings cut 3 in. x 3 in. to 4 in. thick.

The Government of Queensland also show a handsome stand, on which are polished cups and drops, illustrating 133 varieties of timber indigenous to the colony; also a second handsome stand showing 142 specimens of timber in turned and polished cups. Mr. J. W. Carey, of Brisbane, has a handsome trophy of board panels polished showing varieties of Queensland timber. Messrs. M'Ghie, Luya, and Co., the well-known timber merchants of Noosa and Brisbane, show a cross section of Queensland kauri pine grown at Noosa. The Rockhampton district is represented by a collection of 50 varieties of timber obtained in the district, and Mr. Henry Sturgiss, of Rockhampton, by his turnery work, proves that they can be put to good service. Mr. D. Spence, of Cairns, exhibits a collection of valuable woods found in the dense scrubs of that tropical district. Barks, both medicinal and for tanning purposes, are well displayed in specimens of blue gums, iron, mangrove, green wattle, black wattle, fever and crab tree barks. Mr. Staiger, Curator of the Brisbane Museum, shows extract from the bark of a northern tree which has been found to be very serviceable for tanning purposes. There are a large variety of gum extracts caught from the exuding trees, besides some guttapercha from the Herbert River, sent by Messrs. Wickham, and Hammick. Altogether this branch of the Court is extremely valuable and interesting.

One of the wonders of the Queensland Court, and which is quite new to the majority of our visitors, is the capably stuffed specimen of the dugong, which was caught a few months since by Messrs. Stiller and Co. in Moreton Bay. It is only at certain seasons of the year that they can be captured, and this is when they come into the still waters of the bays during the breeding season. The one exhibited is an old bull dugong, and estimated to be about 40 years old. It is 9 ft. long, and weighed when caught 800 lbs. The dugong fishery will be one of the most valuable in northern waters, and at present there are only two stations, one in Moreton Bay and one in Harvey's Bay, where they are regularly caught. The oil is considered by the medical faculty to be far superior to cod liver oil, and for persons

suffering from chest diseases, it is the most valuable, as also for invalids and young children. The flesh is cured and sold as bacon, and doubtless dugong bacon will shortly be an institution in the Sydney markets from the very appetising samples shown by Messrs. Stiller and Co., the price of which is 8d. per lb. Samples of the oil and lard, the latter of which is considered a sovereign remedy by outward application and absorption for all forms of defective nutriment. The bones of a dugong are also valuable as ivory. Another very interesting novelty which is shown by the trustees of the Brisbane Museum is a stuffed specimen of the *Ceradotus Forsterii*, which is found only in the Mary and Burnett river tributaries. It is the only known link between the fish and the lizard, and is the only living animal whose ancestry can be traced to the cretaceous formation. It has gills and also one lung. The gills are used only when the water is good, but when the water gets bad—through the rotteness of organic matter—it rises to the surface and inhales fresh air through the lung. It is capable of travelling some distance overland, and is in the habit of crossing from one watercourse to another on the watershed of the Burnett. In doing so the lung only is used. The discovery of this fish caused considerable excitement amongst savants in the old world, and some specimens which were sent to London and America by the Queensland Government, and Messrs. John Walker and Co., of Maryborough, caused much interest. The specimen shown is a very fine one, and the Executive Commissioner is expecting some living specimens of this wonderful animal for exhibition from Mr. G. W. Roebeck, of Maryborough. The fish is very shy and most difficult to net, and it has required days and weeks of careful watching to secure those specimens which have been obtained.

The sugar industry is well represented by some splendid samples from various plantations and a trophy of sugar cane shown by Mr. John Macdonald, of St. Helena. Plantation owners from north to south also exhibit fine samples of their different sugars:—Vacuum pan boiled, by Messrs. Cannan and Moreton, of Maryborough; Mr. W. H. Couldry, Ayeston, Beenleigh; Messrs. Neame and Co., Dun-ness, on the Herbert; Mr. Robert Muir, Norang Creek. Open pan boiled sugar is shown by Mr. Alfred S. Cowley, Herbert River. Mr. John Gartside, Coomera; Messrs. Tooth and Co., Yengarie; Messrs. Gartside, Muir, and Black, Noyea Plantation show three samples; and Mr. John Spiller, Pioneer Estate, Mackay, shows white sugars of excellent sorts. The importance of this growing industry may be imagined when the statistics from the very excellently compiled catalogue show that in 1868 its cultivation commenced with a yield of 609 tons, and in 1877 there were 8043 acres of cane crushed, producing 12,243 tons of manufactured sugar, 510,260 gals. of molasses, and 196,000 gals. of rum; but the returns to Dec. 1878, show that then 16,584 acres were under sugar cultivation, 11,005 acres of which were crushed, and yielded 16,490 tons of sugar. The total quantity of sugar produced in the colony to the end of 1878 is estimated at 75,000 tons, which at the low estimate of 24/- per ton, makes up the very respectable amount of 1,800,000. Mackay is by far the largest sugar producing district, and on March 31 there were 16 mills at work, producing 6900 tons of sugar, 285,490 gallons of molasses, and with three distilleries, 95,898 gals. of rum. The many excellent samples of sugar shown in the Queensland Court will doubtless be of great interest to our visitors, and the exhibits shown comprise the best manufactures from about 50 plantations.

FORMATION OF COAL.

A series of highly interesting investigations have been made during the last quarter of a century, at the Museum of the French Académie des Sciences, by the eminent director, Mr. Frémy, in connection with the nature of the vegetable tissues, and amongst the problems of which he sought the solution were—Is it possible for chemistry to make known the exact composition of the elements of which the organs and the tissues of vegetables are formed, at present but imperfectly defined, such as chlorophyllus gum, the gelatinous substances of fruits, which are found in a great number of tissues, and which certainly play an important part in the vegetable organisation? and—Will it be possible when all these substances are understood to determine under what influences the tissues of these vegetables are capable of being transformed into fossil fuel, such as lignite, coal, and anthracite. Having definitely ascertained that the characteristic property of the organic elements is to produce under the influence of fermentation or by the action of chemical reagents a series of gummy and gelatinous substances; and, further, from an investigation of the bodies forming the fibres, cells, and ducts, that the vegetable framework is constituted of several kinds of isomeric cellular substances, and a very important body—vasculose—which runs abundantly in the ducts. It is the vasculose which causes the hardness and density of the ligneous tissues to vary according to the proportion in which it is contained. Oak may contain 30 per cent. of it, and as much as 50 per cent. may be found in nutshell. The vasculose is found between the walls of the fibres and the cells, and unites them. Mr. Frémy then studied the bodies which cover and protect the internal tissues, such as, the cuticle. He called by the name of *cuteose* the substance which forms the cuticle, and which is even found in cork. It is remarkable for its fixity, and is scarcely affected by sulphuric acid. Finally, he examined those bodies which are most frequently met with in the tissues. Gum, for instance, is not a neutral substance, as has been commonly supposed, but a veritable salt, resulting from the combination of a genuine acid with lime. The chlorophyllus itself is not a neutral substance. It is formed of a bluish-green alkaline salt, phylloxyanate of potassa.

The solution of the difficult and interesting problem of the formation was that to which Mr. Frémy then turned his attention. If vegetable paleontology has made such great progress in these latter times, it may be said that the chemical part of the question has remained in absolute darkness. We know not under what influences the vegetable organisation has been destroyed to form this black bituminous mass, partly fusible, non-organic, and insoluble in solvents, which constitutes coal. This substance neither resembles the pyrogenous bodies produced in our laboratories nor the ligneous tissues which have formed it. By distillation it gives forth volatile products which do not resemble those given by wood. It leaves also, as a fixed body, a special substance called coke, which is very different from charcoal. The experiments of Mr. Daubréau upon anthracite and of Mr. Barouillet upon coal lead to the supposition that the transformation into coal is brought about by the action of heat and pressure upon vegetable tissues; but the heating of these tissues, and the substances which most frequently accompany them in the organisation to 200° or 300°, only furnished a fixed substance, which offered no resemblance to coal; but upon submitting to the same test certain bodies produced by organism, such as sugar, starch, gum, &c., substances having a certain analogy to coal were produced: they were black, shiny, often melted, and were quite insoluble in acids and alkalies. The analysis of these "coally substances" has demonstrated the complete analogy of their composition with that of natural coal. Coal from gum gives almost the same proportions of carbon, hydrogen, and oxygen as natural coal. Mr. Frémy concludes, from these coincidences of composition, that the elements contained in the vegetable cells—such as sugar, starch, and gum—play an important part in the production of coal.

To support the conclusions arrived at it was necessary to explain how the tissues of vegetables could lose their organic form and produce the amorphous mass called coal; and likewise to prove the tissues to be capable of undergoing the same coal transformation which was realised by operating upon the non-organic bodies which accompanied them. Mr. Frémy had observed in lignite and peat that the ulmic acid appeared in proportion as the ligneous tissues lost their organisation. When a peat was advanced he only found insignificant remains of organic tissue, but then it contained from 50 to 60 per cent. of ulmic acid. On examining fossil wood Mr. Frémy found pretty thick black and shining layers of ulmic acid proceeding from the transformation of vasculose beside the ligneous fibres, which were not yet completely disorganised. This observation at once demonstrated the transformation in the ligneous tissue itself of a part of the wood into ulmic acid. In this way Mr. Frémy was led to admit the fact which appeared to predominate in his researches—that the vegetable matter was first changed into peat before producing coal.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Berggrath Dr. VON GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

and that in this modification the disappearance of the organic tissues was owing to a kind of peaty fermentation. To confirm this hypothesis he found it necessary to prove that the ulmic acid could, like the bodies previously experimented upon, be transformed into coal, and discovered that, after a calcination of 120 hours, the ulmic acid of the peat was converted into artificial coal, presenting the same composition as the coal of Blanzy. Lastly, the mixtures of chlorophyll, fatty bodies and resins obtained from leaves by treating them with alcohol, when submitted to the same operation—that is to say, heated under the pressure of 150 hours—produced a black, viscous, odorous substance, insoluble in alkalies, and presenting an evident analogy with natural turpentine.

The conclusions which Mr. Frémyn draws from the facts which he has ascertained are that—1. Coal is a substance which proceeds from the transformation of vegetable matter, but which no longer preserves its organic form.—2. The vegetable marks which the coal presents are produced by it, as in schist or other mineral substances, and do not prove its organisation. This fuel is a bituminous and plastic matter, on which the external features of the vegetation are moulded. When a piece of coal presents on its surface, or within its interior, marks of vegetation it is not to be thence inferred that the adjacent parts are necessarily the result of the alteration of the tissues which were covered by the membranes whose form has been preserved.—3. The principal bodies contained in the vegetable cells, submitted to the double influence of heat and pressure, produce substances which present the properties and composition of coal.—4. The colouring, resinous and fatty matters contained in the leaves are changed, by the action of heat and pressure, into substances which approach very nearly to natural bitumen.—5. With regard to the ligneous tissues at the base of the cellulose and the vascular they are not transformed directly into coal. Before being so changed they pass through a process of peaty fermentation, which produces ulmic acid. It is only in the second place that this ulmic acid is transformed into coal, mingling with all the coal-forming substances produced by the contents of the cells.

A PATENT "HURRICANE BLOWER."

The following is a description of an invention patented by Mr. HENRY WILSON, of the Phoenix Works, Stockton. If fully introduced it will by its cheapness entirely change the character of grain-bearing apparatus, stocking, &c. This invention consists mainly of an improved compound air pump of very simple construction and great power, with various auxiliary appliances suitable to the different applications to which the air is intended to be applied. The pump itself is simply a square wooden box, having two horizontal divisions, making three chambers; these chambers are lined with plate glass, and in each of them a square wooden plunger, having an elastic rim round the sides, is worked up and down by means of rods actuated by a compound crank shaft, and in large sizes each plunger is lifted by four rods to ensure a uniform plumb lift. The rods for the lower plungers pass down through the upper plungers and horizontal divisions, the inlet and outlet valves being placed on the back and front of the box. Each plunger is double acting, and the whole giving forth the power of six single acting pumps. The amount of air discharged by a blower, 3 ft. square, working 100 strokes per minute, being 324,000 cubic feet, or equal to nearly 2½ million gallons per hour; or, to put it more plainly, the whole of the air contained in a hall, 140 ft. long, 40 ft. wide, and 15 ft. high, would be entirely charged in a quarter of an hour. This blower is worked by a pair of small cylinders, the smooth plate glass lining and elastic packing of the plungers reducing friction to a minimum, there being no slip or loss of power.

The first auxiliary appliance which needs description is that used for cooling, purifying, and disinfecting air. Immediately in front of the box or pump, and close to the outlet valves, is placed a pipe having branches leading to the outlet orifices, through which the air is driven by the plungers. On each side of these orifices is a row of small holes, through which water is forcibly ejected across the path of the air as it rushes out. Immediately in front of this again is placed a series of flaps of cloth or canvas, which are attached to an endless chain, and caused to travel the whole length and breadth of an outlet surface of the pump, each flap dipping in rotation into a reservoir of cold water, and passing over the outlets, the air from which rushes against the flaps, having been partially compressed in its passage through the blower, is deprived of its heat under compression, and on regaining its natural volume is several degrees colder than the water used for cooling it. A little carbolic acid added to the water deprives the air of any infectious germs with which it may be charged. This application of the invention is specially useful in hospitals and on board ship for cooling, purifying, and renewing the air in the wards, holds, cabins, engine rooms, &c. For cattle and emigrant ships it is particularly valuable, as the air can be supplied to the various 'tween decks in sufficient volume, and perfectly pure, cool, and refreshing (no matter if and how long the hatches may be battened down) to supply the needs of hundreds of emigrants or cattle. The air in the 'tween decks, sufficient to accommodate 300 or 400 head of cattle, or as many emigrants, can be entirely changed every few minutes, the vitiated air drawn out, and replaced by an equal volume of perfectly pure and cool air, while in coal laden ships the risk of explosion from accumulation of gas may be entirely avoided in the same manner. This arrangement was specially designed to enable the operation of malting to be carried on through the summer months, during which, in consequence of the air being too high in temperature, and charged with minute animaculæ destructive to malt and its products, malting has to be entirely suspended, and brewing partially so. To meet this the blower is fitted on the suction side with filters of cotton wool, through which the air is drawn and effectually cleared of the destructive germs, and being cooled down several degrees below the temperature of the water used for cooling, it gives in winter or spring a temperature at all times to the malthouses and brewery, and so enables the operations to be carried on all the year round. The cooling power of this appliance is also made available for condensing, cooling liquors, &c., the cold air charged with moisture being dashed against a cylindrical vessel placed in front of the outlet, the steam or liquor to be condensed or cooled passing in a thin stream down the inside, the vessel revolving slowly meanwhile. There are also other important advantages derived from this application of the invention.

The next auxiliary appliance consists of a means of heating the air to a high temperature, which is effected by driving the air through a series of flaps of wire gauze. Iron rods or chains next pass either through a fire or the flame of a gas blow-pipe, or where a great degree of heat is required through revolving fires that pass in rotation across the path of the air rushing through the exit pipe. This application is valuable for drying and roasting malt, and dispenses with the use of malt kilns, drying grain, evaporating, cooking, and any other purpose for which hot dry air is a desideratum.

The third application to be noticed consists of an arrangement by which the blower is utilised for elevating, carrying, screening, and cleaning grain, and for this purpose a revolving drum, containing two or more chambers, is attached to and worked by a shaft from the blower shaft. A tube from the blower is carried to the underside of this revolver on the upper side, and in a line with which the carrying tube is fixed. A hopper, also, is fixed on the upper side and opposite to where the wind tube is. The grain is filled into the hopper, and passing into the chambers of the revolver is carried round, and coming opposite to the wind tube is caught by the wind and carried with great force in any direction, height and distance being no object, as each charge of air carries its cartridge of grain, and the rate of propulsion is about 100 ft. per second, and directed up and down right and left by simple flap valves, while the operation of cleaning and screening is performed by the grain being driven against sieves and screens, the dust being carried away by the wind through suitable outlets, the solid particles deposited in the receptacles provided. This arrangement is applicable to unloading grain and like substances from ships and wagons. The revolver and wind pipe being placed in the ship's hold, the grain is simply trimmed into the hopper, and by means of telescopic or flexible pipes it is blown to any required points. The blower may be fixed anywhere.

Another purpose to which this arrangement is applied is that of mechanical, or, more properly speaking, pneumatic stowing. Coal

being filled into the hopper, in conjunction with the revolver, it is blown regularly and lightly into the furnaces, the wind used for carrying the coal acting as a perfect smoke preventer, as it ignites the green coal into flame immediately on its being deposited on the fire. This arrangement is specially valuable in steamers, as the feed can be so regulated that every furnace can be supplied with exactly the same quantity, and in rotation, without the fire-doors ever having to be opened. The coal may be fed into the hopper at any distance from the fires, and in coal-laden ships if the suction of the blower is carried into the holds or bunkers the whole of the gas generated therein can be made the vehicle for conveying the coal to the furnaces, and add to the intensity of the heat instead of working mischief by giving out its inflammable powers in the wrong place.

This arrangement is also of great use in raising small coal and duff out of pits. A blower of sufficient size and power to ventilate the pit could be utilised as above described for driving the small coal up the shaft, using the foul air as the vehicle, thus serving a double purpose.

SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE INSTITUTE OF MINING ENGINEERS.

The monthly meeting of this Institute was held, on Monday, at the Mining Museum, Dudley—Mr. HENRY JOHNSON (President) in the chair. There were also present Mr. W. G. Hayward (Vice-President), Mr. J. Hughes, Mr. J. M. Fellows, Mr. Thomas Parton, F.G.S., Mr. J. F. Addenbrooke, Mr. J. W. Davies, Mr. W. Whitehouse, Mr. R. Mason, and Mr. Alex. Smith, M.I.C.E., secretary.

The minutes of the previous meeting were read and confirmed.

The SECRETARY (Mr. Alexander Smith, M.Inst.C.E.) then read the following paper "On Yeandon and Co.'s Briquette Machine":—

The utilisation of what the world has hitherto regarded as waste substances may be classed amongst the most important achievements of nineteenth century ingenuity. Since man has bowed in submissive reverence to the teachings of Nature, and acquired from her priceless lessons in the science of economics, civilisation has advanced by mighty strides. A score of illustrations will suggest themselves to the thoughtful mind, and experience will bear out the view here put forward. Though the intelligence of the present day may fail to recognise the truth in its full extent, the advanced perceptions of a future age will note that the mechanical engineer and the abstract philanthropist, while working in separate paths, are in reality actuated by the same desire, tending to the same goal, and effecting the same object. Whether the intention and effect of an appliance be the economy of labour or the economy of substance the practical end obtained is the same—the improvement of man's condition.

Amongst the multitude of plans by which economy of material may be best carried out few are worthy of more thoughtful and attentive consideration, especially to a meeting like this, than the economical utilisation of small coal. Few in number are the collieries in this country where this subject has been practically grappled with, and put into operation in a profitable manner. And yet it has certainly not been for a lack of a direct interest in the subject. Go where you will the *bête noir* of the colliery owner and manager alike is the large amount of small coal, and the unprofitable prices realised for it. In many places it is profitably utilised by being converted into coke, others find an easy market among the manufacturing industries by which they are surrounded, but very many collieries have no coal of a coking quality, and are situated too far from a manufacturing centre to realise a profitable price for their small coal. The main question still remains practically unanswered in this country—how to use the small coal in the most profitable manner.

We say in this country advisedly, for the manufacture of artificial or compressed fuel has been a growing and prosperous trade for many years on the Continent, and the majority of large collieries in France and Belgium are either directly or indirectly connected with the utilisation of their small coal. One reason, doubtless, why the manufacture has been much more largely developed on the Continent than here has been the cheapness of fuel in this country. Another is the difference between the continental house fire and ours, the Englishman adhering to his open hearth with its ruddy glow and flame, whilst the Frenchman or Belgian, with his stove or close fire, is content to have the heat without the flame. There are two principal plans or processes by which the manufacture of compressed fuel is carried out, and by which the coal is agglomerated or caused to adhere, the first by the use of material of a bituminous nature, such as pitch, tar, &c.; the second the use of earthy material, such as clay, &c. Both have their advantages and their disadvantages, which we will briefly try to state.

The advantages of the pitch process are—Less ash, easier ignition, greater power to stand exposure to damp, and a higher price per ton for the fuel when made. The disadvantages are—The heavy cost of the necessary plant (nearly double that for the clay process), cost of the process 3s. 6d. to 4s. per ton, great increase of smoke, no cohesion in pitch when exposed to heat, and the liability of the pitch to run on or through the bars, and the blocks to fall to pieces before being properly consumed. The pitch process is largely used in France, and has been used to a comparatively limited extent in South Wales for over 20 years. South Wales is exceptionally situated both on account of the character of its (smokeless) coal, and also its being on the sea coast. The great obstacle to a larger development of the manufacture of compressed fuel on the pitch process in this land of cheap coal has undoubtedly been the cost of the process. When you add 3s. 6d. to 4s. per ton for making to the cost of the small coal itself it will be readily seen there is not much margin for profit when the fuel has to contend (as it always will have) with the large coal; the price of making kills it.

We may here state that our briquette machines can be adopted to make briquettes, agglomerated with either pitch or clay. It is, however, in connection with the latter process we have hitherto supplied them, the particulars of which we proceed to explain. The clay to be used is preferable when of a plastic nature, soft and greasy to the touch, and free from sand; the ordinary yellow clay will do; fire-clay if available is better still, on account of its strength. The clay is thoroughly mixed with water to the proper consistency in the mixer, which is provided with a sliding door at the bottom. The clay water runs through a grate to catch any stones, &c., into the cistern or agitator, where it is heated, and kept continually in motion. The heated clay water is raised by a pair of chain elevators into a spout, which conveys it into the centre of the mixing pan.

There is also a coal-washing apparatus (calculated to wash 100 tons per day) whence the coal, if too large, falls through the crushing rollers into the elevator box, from which it is raised by a second pair of chain elevators into the centre of the mixing pan along with the clay water. The regular feeding along with the exact quantity and delivery of each are regulated according to the nature of the coal. In the mixing pan the ingredients are thoroughly mixed together, and gradually worked to the circumference, whence through two holes in the bottom it falls into the hoppers of the briquette machine, where it is moulded and compressed into briquettes. The briquettes are wheeled away, and stacked in a drying-shed for 24 hours, when they are ready for sending away. The drying-shed is usually made over the boilers, so as to utilise their waste heat.

The cost of making the briquettes is 7d. per ton; if the coal is washed 2d. per ton extra. This includes all labour, &c., but not the cost of the coal and clay. The cost of a complete mixing apparatus (such as we usually supply with two machines), including driving shaft and drums, is 220*l.* The cost of a high-pressure horizontal engine to drive the above plant 135*l.*; if coal washing apparatus is adopted 260*l.* must be added to the above.

As the whole tangible objection to this process is the increase of ash, consequent on the use of clay, it is advisable to wash the coal if dirty, so as to reduce the percentage of ash. In the mixing gas tar or any other cheap liquid can be added as desired to increase the quality of the briquette. We can confidently recommend these machines, plant, and process to any owners or managers of collieries in this country, whilst we leave others who have favoured us with their orders already to speak of the merits of both plant and machines.

A vote of thanks was passed to the authors.

The President appointed Messrs. Peacock and North as scrutineers, and Messrs. Hayward and Rodgers as auditors, of the accounts.

The President, Vice-President, and members generally expressed their sympathy for Mr. Thomas Latham, late President, on his sudden and severe illness, and the secretary was instructed to send a letter conveying the feeling of the meeting.

FOREIGN MINING AND METALLURGY.

The rise in the Belgian iron trade has continued almost unchecked. In the Charleroi basin many proprietors of rolling-mills are marking No. 1 iron in bars at 5*l.* 12*s.* per ton, No. 2 at 5*l.* per ton, and No. 3 at 6*l.* 8*s.* per ton. Not only do orders abound in the trade, but enquiries are soon followed by orders. This is attributable of course to the belief of intending purchasers that prices will go still higher. At Liège the iron trade has followed the course of the Charleroi market. Steel has experienced a sharp advance, and it is now impossible to obtain steel tyres for less than 8*l.* per ton. The John Cockerill Company has work assured to it for six months in advance; a few days since it obtained orders for 20,000 tons of rails on foreign account; of these rails 6000 tons are ordered for America at 5*l.* 16*s.* per ton, free on board at Antwerp. The Administration of the Belgian State Railways shows a disposition to postpone orders for rails just at present; the administration is fairly frightened at the high rates now current.

The Belgian coal trade has been much interested by an announcement that the Belgian Government proposes to let, in June, 1880, contracts for an enlargement of the canal from Charleroi to Brussels. The coal markets have been very firm in Belgium; one colliery in the Couchant de Mons has just concluded an important contract for coal at 7*s.* per ton for the whole of next year. Contracts have been let for 4500 tons briquettes to be delivered at Ostend for the naval service. A partial strike has occurred at the Levant du Fenu Colliery, at Culmes. The men on strike have demanded an advance of wages.

The improvement in the iron trade of the Haute Marne has become more decided. The confidence of iron merchants in the future appears very marked, and is shown by the orders which they address to the various works. Orders for both ordinary and fine plates have come to hand tolerably freely, and the advance in rough pig has made progress every day; castings of all kinds have followed the same upward movement. In the Meurthe-et-Moselle a price of 2*l.* 5*s.* 9*d.* per ton has been established of late for refining pig, and it is believed that there will soon be a further advance to 2*l.* 8*s.* per ton. No. 3 pig for re-casting is quoted at 3*l.* 1*s.* 8*d.* to 3*l.* 2*s.* 6*d.* per ton. In the Loire-et-Rhône orders have come to hand freely, and the works of the district have rarely been so busy at they are at present. There has, however, been much advance in prices.

A tramway 17*l* miles in length has just been completed between Rome and Tivoli by a Belgian company. The engines for the line were supplied by MM. Carels Brothers, of Gand. The French Public Works Company, formed by an amalgamation of the old Dyle and Bucalow Companies, has obtained a contract for the establishment of a narrow gauge railway, 68*l* miles in length, intended to unite Paranagua to Coritiba, in Brazil. In respect of this line the Brazilian Government guarantees 7*s.* per cent. per annum for 30 years, upon a total capital of 1,230,000*l.* The condition of the great French metallurgical establishments is just now satisfactory. The Fives-Lille Company is so overdone with orders that it has deemed it unnecessary to submit tenders at several adjudications which have just taken place,

CHEAPER COAL FOR THE METROPOLIS

It will be gratifying to a large number of ready-money purchasers of coal to learn that the National Coal Supply Association, with a capital of 250,000*l.*, in shares of 2*l.* each, is now in course of formation, so that the prospect of consumers in London and the suburbs getting coal direct from the producers at a fair price, which may be roughly taken at 25 per cent. below the prices, is brighter than ever. The enormous prices which denizens of the London suburbs purchasing coal for ready money have to pay to cover the losses of the retail dealers by giving credit, and to supply the profits of the middle men, was pointed out in the *Mining Journal* a short time since. It seems that at present more than one-third of the whole amount paid by the consumer goes into the pockets of the middle men, so that whilst the carrier, whether shipowner or railway company, realises the minimum of profit and the consumer is overcharged, the coal-owner receives so small a proportion of the price that the miners he employs can only be inadequately paid; in fact, are comparatively starving whilst the consumer is paying a price which would permit of their receiving fair wages. The North Country owners have already made a move in the matter, and if the profit now appropriated by the middlemen be equally divided between the coalowner and the consumer the latter may look for a reduction of at least 15 per cent., whilst the working miners may be better remunerated, and there would still be a fair profit for those engaged in carrying out the working arrangements.

The National Coal Supply Association do not pretend that they will be mere philanthropists; indeed, it is probable they will earn a good profit, but they propose to secure their position by participating directly with the producer and consumer, and with no one else. They will supply all classes of coal directly and as cheaply consistent with a fair market profit as the margin of expenses between the colliery and the consumer will permit. As in the case of the Civil Service and other similar co-operative undertakings, there will in this case be a total absence of risk, as no business whatever will be done except for cash. It is pointed out that it is a very significant feature in coal industry just now that whilst colliery owners are loud in their complaints of unremunerative results, and the working colliers' wages have gradually reached a minimum point, this reduction of price in coals is scarcely reflected at all in the charges made by the distributing portion of the trade. The cry of dear coals continues to be a chronic one in the mouths of the London consumers, whilst the producer pines under unexampled cheapness. The evidence recently given before the Select Committee of the House of Commons on co-operative trading has so far abundantly established the advantages of the ready cash over the credit system. It will, therefore, be the aim of this Association to carry out the system of cash payment by householders and private consumers on or before delivery; and for the convenience of customers the company will open deposit accounts, to be drawn against in purchases, as in the case of the Civil Service Co-operative Association and kindred undertakings. The original 2*l.* shares of that Association are now worth (according to Mr. Cox's evidence as reported in the Times) from 7*l*. to 10*l*. each. The original 10*s.* 6*d.* shares of the Civil Service Supply Association are now worth from 80*l*. to 90*l*. per share.

Matters of this kind always require considerable time for organisation, but in this case every care is it seems being taken to make all necessary preliminary arrangement before putting the company on the market. Negotiations are at present going on with an established and well-known firm, whereby the association will secure the services of a large number of agents well accustomed to the work to be done; these will receive the orders of customers, and will be prepared to cover every district of London and its suburbs, and to ensure the prompt delivery of coal, the quality and quantity of which will be accurately denominated. The enterprise is one which is likely to receive the support of the majority of private consumers, and will doubtless confer a great benefit, by supplying cheaper coal, upon all districts to which its operations may extend.

The subjoined with reference to this subject appeared in the Pall Mall Gazette of Tuesday:—The price of coal at this season of the year is to a vast number of the inhabitants of London a matter of as much importance as the price of meat, if not more. There is, however, a mystery about the market for both these necessities of life which no one unversed in the secrets of trade can fathom. As regards the price of meat, consumers have almost given up all hope of being able to solve the problem, and even buy with resignation from the butchers meat which they know to be American, but which is sold to them as English at a price that cannot be justified on any known principle of commerce. Coal stands in even a more remarkable position, if possible, than meat. There is a wholly inexplicable difference between the prices at which coals are sold on the London Coal Exchange and that at which they are offered by the dealers to

their customers. This state of affairs naturally gives rise to much discontent, not only on the part of the public generally, but also on that of the North Country coalowners, who complain that they make little or no profit out of coals at present, and are in no way responsible for the high charges in London.

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c
1, ST. MICHAEL'S ALLEY CORNHILL, LONDON.

Attention was first called to the "Red River" by Mr. Watson in his "Cornish Notes," published in the *Mining Journal* for Oct. 12, 1872, He wrote—"Few people out of Cornwall ever heard of the Red River. Yet I question if any stream of Brazil, any gully in Australia or in California, has ever proved more continuously rich and productive than the Red River has been for the squatters along its slimy bed." It flows from Redruth down to the sea—a distance of two or three miles—and is fed by tributary streams from the *dressing-floors* and slime pits of the principal mines, and along its course might be seen "the frames and tables of the squatters who are working the slimy bed on their own account, and at a profit to themselves of about 20,000*l.* a year." These men, in fact, stopped the water and slime as it flowed to the sea, and got the tin from it, which was certainly better than allowing it to be lost in the sea, but it did not say much for Cornish care and attention in dressing their ores on the mines. On this head Mr. Watson remarked at that time—"I have heard of the agents of some of the mines having frames and tackle of their own on the river, and if this be true I can scarcely conceive anything that could be more detrimental to the interests of their employers. By the regulation of the stamps and grates the tin might be made to flow more or less to the Red River, and enough goes there as it is."

At the meeting of the Mining Institute of Cornwall last week Capt. James, of South Frances, estimated the tin still going down the Red River at 30,000*t.* a year!

The great Gorse lode of D'Eresby Mountain is the champion lode of the district; it yields blende in one part shallow, and lead in depth. The heading part runs through D'Eresby Consols, and the entire lode runs for 300 fms. through Aberllyn. Here it has been cut into by three different adits or levels into the hill, and all rich for blende. The agent estimated the blende discovered at 12,000*t.*, and we are returning 50 tons per month at a profit, but the main feature, of course, is lead, and the Valley cross-cut when driven up will come 30 fms. under the blende. Even now in the upper levels very rich stones of lead are occasionally found with the blende. Many agents think this mine the best speculation in the district, and it has ample machinery and ample capital to work it. And now that the Gorse lode has proved itself so rich in D'Eresby Mountain, we think it is time the directors should commence to open upon it in D'Eresby Consols.

SOUTH FRANCES.—Instead of doing the work which ought to be done, and should be done at once at this mine, we regret to see that at the meeting in Cornwall a dividend of 15*s.* per share was declared, and a system of "tinkering" at the shaft and machinery adopted, which, if we are rightly informed, can only end some day in sudden disaster. We now publish the "caution" we received in October, and to which we have more than once alluded. We can only add the writer is a well-known practical agent, and correspondent of the Journal, and inspected the mine twice before writing us.

Oct. 16.—South Frances will have a great drop as soon as they begin to cut down the shaft, which must be done before the mine can be worked satisfactorily; and the rich stopes will very soon be cut off by a downright lode near the boundary of West Bassett, and even if it is worth while to pursue the lode beyond this heave towards West Bassett boundary it will take a year and a half to get stopes open in the other side of the heave. The adjoining sketch will show the position into which they are drifting, and as soon as they cut the stopes out to the height of the heave there will be an end to their rich bunch, and I doubt whether they will be able to continue after that without cutting down the shaft. The mine is also in a very bad state, only one shaft communicating with the bottom, and the ventilation and footway into the mine really disgraceful, and only surprising how they get men to go into it, and how the Government allow it. This mine should never have made a dividend. Their engines are all very old, and require replacing. Their dressing-floors are fixed in a hole, so that they cannot extend them without great expense. They really want new stamping-engine, stamps and floors, two new pumping-engines, and another new whin.

The following are the assays of the ore sampled at Wheal Crebors:—121 tons, 6*s.*; 92 tons, 6*s.*; 81 tons, 6*s.*; 79 tons, 6*s.*; 72 tons, 10*s.*; 44 tons, 10*s.* per cent. Taking ore at the present price per unit we expect the sale will realise 2300*t.*

GLENROY.—The agents here are of opinion that both levels, which have now well defined lodes in both ends, may come into ore as they get under the ore ground in the levels above.

PRINCE OF WALES.—In last week's *Mining Journal* we stated that this mine had been purchased at auction by Capt. Andrews, and would be formed into 12,000 shares, with 7*s.* 6*d.* per share to be paid down, and that the shares would in the first instance be offered to the existing shareholders in the old company. But, assuming that not more than half would be accepted by them, 3000 shares had been taken up by Capt. Andrews, ourselves, and others, and that we should be happy to make up a list for our friends for the remainder (which we supposed would be about 3000). Well, on Monday applications reached us for upwards of 7000 shares, and on Thursday the list swelled up to 10,835, and it may be a day or two before all the old shareholders reply. It will thus be seen that it will be impossible for us to secure the numbers that all require in full.

SATURDAY, NOV. 29.—Market not quite so firm for tin shares. Crebors, East Caradon, Marke Valley, and West Asheton firmer. Carn Brea, 5*s.* to 6*s.*; Dolcoath, 5*s.* to 5*s.*; South Frances, 11*s.* to 11*s.*; Tincroft, 16 to 17; West Frances, 11 to 13; Crebors, 7*s.* to 8; East Caradon, 3*s.* to 3*s.*; Marke Valley, 27*s.* to 32*s.*; West Asheton, 2*s.* to 2*s.*; Van, 22 to 23; Great Laxey, 18 to 19*s.*; Tankerville, 5*s.* to 6*s.*; Herodsfoot, 2*s.* to 3*s.*; Leadhills, 3*s.* to 4*s.*; Roman Gravels, 11*s.* to 12*s.*; Agar, 5*s.* to 6*s.* (all paid); Peevor, 20*s.* to 21*s.*; Devon Great Consols, 5*s.* to 6*s.*; Parys Copper, 18*s.* to 20*s.*; East Crebors, 22*s.* to 27*s.*; South Caradon, 6*s.* to 7*s.*; West Tolgus, 26 to 28; Cape Copper, 32 to 34; Don Pedro, 15*s.* to 20*s.*; Richmond, 9*s.* to 9*s.*; Santa Barbara, 40*s.* to 45*s.*

MONDAY, DEC. 1.—Market for the shares again easier. Lead and copper steady. Dolcoath, 5*s.* to 5*s.*; Carn Brea, 5*s.* to 5*s.*; East Lovell, 2 to 2*s.*; South Condurrow, 14 to 15; South Frances, 11 to 11*s.*; West Frances, 11 to 12*s.*; Peevor, 19 to 21; Wheal Bassett, 3 to 3*s.*; Van, 22*s.* to 23*s.*; Roman Gravels, 11*s.* to 12*s.*; South Darren, 23*s.* to 3*s.*; Leadhills, 3*s.* to 4*s.*; Tankerville, 5*s.* to 6*s.*; Crebors, 7*s.* to 8; East Caradon, 3 to 3*s.*; Devon Great Consols, 5*s.* to 6*s.*; Mellanear, 4*s.* to 4*s.*; Parys Copper, 18*s.* to 21*s.*; East Van, 2*s.* to 2*s.*; Glenroy Lead, 10*s.* to 15*s.*; and shares scarce; Grogwinion, 3*s.* to 3*s.*; Herodsfoot, 2*s.* to 3*s.*; Leadhills, 3*s.* to 4*s.*; Pateley Bridge, 15*s.* to 20*s.*; and very firm; South Darren, 2*s.* to 3*s.*; Tankerville, 5*s.* to 6*s.*; Van, 22*s.* to 23*s.*; West Asheton, 10*s.* to 11*s.*; West Tolgus, 26 to 28; Cape Copper, 32 to 34; Don Pedro, 15*s.* to 20*s.*; Eberhardt, 3*s.* to 3*s.*; Javali, 7*s.* to 9*s.*; Panulicillo Copper, 4*s.* to 5*s.*

TUESDAY, DEC. 2.—The demand to-day has been chiefly for lead and copper shares. South Caradon, 7*s.* to 8*s.*; Crebors, 7*s.* to 8*s.*; Devon Great Consols, 5*s.* to 6*s.*; East Caradon, 3*s.* to 3*s.*; Mellanear, 4*s.* to 4*s.*; Marke Valley, 3*s.* to 3*s.*; East Crebors, 2*s.* to 2*s.*; West Tolgus, 26 to 28; West Seton, 45*s.* to 50*s.*; Parys Copper, 18*s.* to 21*s.*; Glenroy Lead, 10*s.* to 15*s.*; and shares scarce; Grogwinion, 3*s.* to 3*s.*; Herodsfoot, 2*s.* to 3*s.*; Leadhills, 3*s.* to 4*s.*; Pateley Bridge, 15*s.* to 20*s.*; and very firm; South Darren, 2*s.* to 3*s.*; Tankerville, 5*s.* to 6*s.*; Van, 22*s.* to 23*s.*; West Asheton, 10*s.* to 11*s.*; West Tolgus, 26 to 28; Cape Copper, 32 to 34; Don Pedro, 15*s.* to 20*s.*; Eberhardt, 3*s.* to 3*s.*; Javali, 7*s.* to 9*s.*; Panulicillo Copper, 4*s.* to 5*s.*

WEDNESDAY, DEC. 3.—Market again very active for copper and lead shares at advanced prices. Roman Gravels, 13 to 14*s.*; South Darren, 3 to 3*s.*; Tankerville, 5*s.* to 6*s.*; Van, 22 to 24; East Van, 2*s.* to 3*s.*; Glenroy Lead, 12*s.* to 17*s.*; Great Laxey, 18 to 19*s.*; Grogwinion, 3*s.* to 3*s.*; Herodsfoot, 2*s.* to 2*s.*; Leadhills, 4*s.* to 4*s.*; Crebors, 8 to 8*s.*; Devon Great Consols, 6*s.* to 7*s.*; East Caradon, 3 to 3*s.*; Mellanear, 4*s.* to 4*s.*; Marke Valley, 3*s.* to 3*s.*; Parys Copper, 18*s.* to 21*s.*; Glenroy Lead, 10*s.* to 15*s.*; and shares scarce; Grogwinion, 3*s.* to 3*s.*; Herodsfoot, 2*s.* to 3*s.*; Leadhills, 3*s.* to 4*s.*; Pateley Bridge, 15*s.* to 20*s.*; and very firm; South Darren, 2*s.* to 3*s.*; Tankerville, 5*s.* to 6*s.*; West Asheton, 10*s.* to 11*s.*; West Tolgus, 26 to 28; Cape Copper, 32 to 34; Don Pedro, 15*s.* to 20*s.*; Eberhardt, 3*s.* to 3*s.*; Javali, 7*s.* to 9*s.*; Panulicillo Copper, 4*s.* to 5*s.*

THURSDAY, DEC. 4.—Market for tin shares very flat, and prices in most cases lower. Lead and copper shares steady. Carn Brea, 5*s.* to 5*s.*; Dolcoath, 5*s.* to 5*s.*; Cook's Kitchen, 3 to 3*s.*; East Pool, 18 to 20; South Condurrow, 12*s.* to 13*s.*; South Frances, 9*s.* to 10*s.*; ex div. 15*s.*; Tincroft, 15*s.* to 15*s.*; West Basset, 10*s.* to 12*s.*; West Frances, 11 to 11*s.*; Agar, 5*s.* to 6*s.*; Wheal Bassett, 3*s.* to 3*s.*; Grenville, 5 to 5*s.*; Peevor, 18 to 20; Van, 22*s.* to 23*s.*; Roman Gravels, 12*s.* to 13*s.*; South Darren, 3 to 3*s.*; Tankerville, 5*s.* to 6*s.*; West Asheton, 10*s.* to 12*s.*; Glenroy Lead, 12*s.* to 17*s.*; Leadhills, 3*s.* to 4*s.*; West Chiverton, 3 to 3*s.*; South Caradon, 70 to 80*s.*; West Seton, 45 to 47*s.*; West Tolgus, 25 to 27; Crebors, 7*s.* to 8*s.*; Devon Great Consols, 6*s.* to 7*s.*; Parys Copper, 18*s.* to 21*s.*; East Caradon, 3 to 3*s.*; Hington Down, 10*s.* to 12*s.*

FRIDAY, DEC. 5.—Tin shares continue very quiet. Leadhills advanced to 4*s.*; South Condurrow, 11*s.* to 12*s.*; South Frances, 10 to 10*s.*; West Frances, 10 to 10*s.*

THE MINING JOURNAL.

[DEC. 6, 1879.]

West Polgoooth Tin Mining Company

STICKER, NEAR ST. AUSTELL, CORNWALL.

On land belonging to C. H. T. HAWKEN, Esq., Trewithian, Cornwall.

To be divided into 6000 Parts or Shares of £1 each.

5s. on application, 5s. on allotment, subsequent calls as may be required at intervals of three months.

Cost Book System, with monthly audit by a Public Accountant.

PURSER—Mr. F. E. YOUNG, 13, Queen-street, Exeter.

MANAGER—Capt. THOMAS WASLEY, late Manager of West Polgoooth and other Mines.

AUDITOR—Mr. R. SOUTHCOTT, Post Office-street, Exeter, Public Accountant.

BANKERS—To be appointed.

PROSPECTUS.

This company is formed to work a piece of almost virgin ground (lying exactly to the south of and adjoining the Old Polgoooth Mines), through the entire length of which runs the main trunk lode of the district known as the Great Polgoooth and Hewas.

It is intended to erect a small rotary engine and other suitable machinery for pumping, stamping, &c.

It is intended, however, in the first instance, to confine attention to those lodes which have paid such enormous profits, both shallow and in depth, in Hewas and Old Polgoooth.

It is believed there is no such piece of comparatively unwrought ground to be found in Cornwall.

The Old Polgoooth raised over £3,000,000 worth of tin, and paid £1,000,000 in

and paid some hundreds of thousands of pounds profit to the adventurers.

The geological conditions are all that could possibly be desired. The killas through which the lodes pass is of the same congenial character that proved so productive in the parallel lodes adjoining. A large elvan course passes to the south, through the whole length of the sett, and intersected by three counter lodes of great promise.

All the machinery required is a small engine for pumping, stamping, and dressing appliances, when good returns of tin ores can be sent to the market in about three months after the commencement of the works, and from the present low price of machinery and materials, this is an exceptionally favourable time for starting such an undertaking. There is a certain prospect of a good rise in value of tin.

The proceeds of the first call will erect all the necessary machinery, and carry on the mine for 12 months, after which it is confidently believed the amount, to

be raised by calls not exceeding 2*s.* 6*d.* per share, at intervals of not less than three months, will open a lasting and profitable mine.

There will be no other call than the first required until the machinery is erected. There is very little doubt that before this time the mine will pay cost, and the shares will command a very substantial premium.

This company is started for the purpose of legitimate mining. A stipulated sum is to be paid to the vendors for the grants and previous disbursements. The vendors of the property having agreed to take in payment the sum of 100*l.* in cash, payable in two equal instalments, and 150*l.* fully paid shares.

Especial attention is called to the feature in the financial management which provides for a monthly audit by a public accountant, to whom the books of the mine will be at all times open.

This extensive sett is held under lease from C. H. T. Hawken, Esq., for a term of 21 years at a rent of £20 per annum, merging into dues of 1*s.* 1*d.*

A considerable number of shares have been allotted privately. Early applica-

tion is requested, which should be addressed to:

The Purser—Mr. F. E. YOUNG, 13, Queen Street, Exeter.

Capt. THOMAS WASLEY, Chacewater, Cornwall.

Mr. WILLIAM BRAY, Chacewater, Cornwall.

Mr. HURFORD, Taft Vale Railway, Cowbridge, South Wales.

All cheques should be made payable to "The Purser of Polgoooth Mine," and crossed "National Provincial Bank of England," Exeter.

Copies of reports from THOMAS J. BEWICK, Esq., M.E., 4, Broad Sanctuary, London, S.W.; Capt. FRANCIS THOMAS, Par, Cornwall; Capt. JAMES TREDINICK, St. Agnes, Cornwall; Capt. JOHN EDWARDS, late Manager of "The St. Stephens' Tin Mines," St. Stephens, Cornwall; Capt. M. WASLEY, St. Agnes, Cornwall, can be had on application.

It is proposed to CLOSE THE LIST ON DECEMBER 31ST, immediately after which date the First General Meeting of Shareholders will be held, and a committee of management appointed, of which due notice will be given.

matters pertaining to the company thoroughly with him, and shall make it a point to visit Birdseye as often as there is any need for so doing. It is my impression that with an average water supply the property will do much better this coming season than ever before since its inception.

SENTINEL.—Nov. 29: The managers report as follows:—The value of our stope and ends is as follows: Stope in the bottom of No. 3 level, east of the winze, is worth 4 tons of lead ore and 5 tons of blende per fathom. Stope in the bottom of No. 3 level, west of the winze, is worth 3 tons of lead ore and 5 tons of blende per fathom.

The No. 4 end driving west is worth 1 ton of lead ore and 1 ton of blende per fathom for the width of the level (5 feet); driven this week 2 feet. The end driving east in same level is worth 2*s.* 6*d.* tons of lead ore and 4 tons of blende per fathom.

The stope (west of rise) in back of No. 4 level is worth 4 tons of lead ore and 5 tons of blende per fathom. The stope (east of rise

No Application for Shares will be received after MONDAY, the 22nd DECEMBER, 1879, for London, and the following day for the Country.

The South Indian Gold Mining Company, Limited.

Incorporated under the Companies Acts, whereby the liability of Shareholders is limited to the amount of their shares.

**C A P I T A L £100,000,
IN 100,000 SHARES OF £1 EACH,**

Of which 33,000 Shares are taken by the Vendors, and the Balance of 67,000 Shares is now offered for Subscription at Par. Payments as follows:—

2s. 6d. ON APPLICATION.

2s. 6d. ON ALLOTMENT.

15s. ON THE 15th JANUARY, 1880.

DIRECTORS.

SAMUEL L. HOWARD, Esq., J.P., Director of the Indian Gold Mines Co. (Limited), Goldings, Loughton, Essex.

Lieut-General EDWARD WRAY, C.B., Wellesley House, Shooter's Hill, Kent.

T. G. GILLESPIE, Esq., Heathfield, Weybridge, Surrey.

The Hon. GERALD C. TALBOT, late Director-General of Stores for India, 31, Ladbroke Gardens, Kensington Park, London, W.

WITH POWER TO ADD TO THEIR NUMBER.

BANKERS.

ORIENTAL BANK CORPORATION, Threadneedle-street, and its Branches in India.

SOLICITORS.

Messrs. ASHURST, MORRIS, CRISP, and CO., 6, Old Jewry, E.C.

AUDITORS.

Messrs. HARDING, WHINNEY, and CO., 8, Old Jewry, E.C.

SECRETARY.

Mr. J. A. MAYS.

TEMPORARY OFFICES.

TOWER CHAMBERS, Moorgate-street, London, E.C.

PROSPECTUS.

This company is formed for the purpose of purchasing and working mining rights on the estates of Caroline, Adeline, Athicunnoo, and Limerick, situated in the Wynnaid district of the Madras Presidency. These properties range over more than 1200 acres, comprising numerous reefs of auriferous quartz of great extent. They have been visited and examined by Mr. C. J. Harvey (late manager of the Clunes works of the Port Phillip Mining Company, Australia), an engineer of great experience in quartz-crushing, and they are pronounced by him to be most valuable properties. His report is annexed.

The statements made during the last few years, and the very considerable interest excited in the minds of scientific men in respect of the gold deposits in the Wynnaid, prompted the Government of India to institute an official inquiry into the subject. The very important and reliable information collected under this inquiry confirms the fact of the existence in this district of abundant deposits of the precious metal. Extracts from the report of Mr. Brough Smyth are annexed, but it may be well to cite here the following observations made by his Grace the Duke of Buckingham, Governor of Madras, at a meeting of the Planters' Association of the Nilgiris, and taken from the Madras Times of Nov. 9, 1878.

"Before breaking up, the Duke rose and congratulated the gentlemen present on the very rich prospect yet before them. He informed them that Mr. Brough Smyth had expressed himself as most satisfied with the great value of the Wynnaid reefs, that he was quite assured there was a great mining future for the country."

"His Grace further said, that it had been his wish, since his arrival in Madras, to visit the Wynnaid, but that it had not been convenient, and he now felt glad that he had not before come down, as the delay had obtained for him the advantage of Mr. Brough Smyth's opinion, and the scientific results he had been able to lay before him of the mining capabilities of the district; and as the Governor of Madras, it gave him very great pleasure to announce that Mr. Brough Smyth's report was eminently favourable. From the statements laid before him by Mr. Smyth, and from his own personal observations, which were so satisfactory, he had no doubt that there was a brilliant future for the country. The results were far more favourable than he ever anticipated, and the richness of the district was beyond question."

The fact that the large supplies of gold furnished to the ancient world had their source in India has been handed down by tradition is confirmed both by history and the translation of documents, and by inscriptions on temples in the locality. The whole district, too, is covered with traces of ancient workings, and these are of great extent on the properties taken over by the company.

The quartz, which may be inferred from the existence of these ancient workings, to have proved remunerative to the hand labourer—who could not have pulverised more than 12 to 14 lbs. a day—must assuredly yield large profits when treated by powerful machinery driven by water-power and directed by the skill of modern science. Manual labour for mining is cheap and abundant in the locality, wages being from 6d. to 1s. a day. Annexed are some statistics showing the profits realised by quartz-crushing companies in Australia, where steam-power has to be employed, and miners' wages are from 7s. to 8s. a day.

It is well known that for years past the character of gold-mining

has completely changed from what it was in the early days of California and Australia; what was then fairly looked upon as a speculation has now become, by the introduction of capital and machinery, a steady and legitimate industry, yielding regular and remunerative dividends. To effect this result, what is now looked for by experts is not so much rich pockets of ore as a plentiful supply of auriferous quartz, which will permit of continuous crushing, and give a fair return for all work done or money expended.

It will be seen by the annexed report of Mr. Harvey that his attention was specially directed to this point. He shows a moderate average yield of gold per ton, which is largely exceeded at certain places. But the moderate average of 10 dwts. is sufficient to yield a return amply remunerative, as may be judged by the following estimate:—

100 tons of quartz crushed per day for 300 working days = 30,000 tons at 10 dwts = 15,000 ozs.	£30,000
15,000 ozs. at 75s. per oz.	per annum = £56,250
Deduct—	
Cost of crushing at 12s. 6d. per ton for 30,000 tons	£18,750
Other expenses, say, 5s. per ton 7,500	= 26,250

For 100 tons per day, net profit per annum... £30,000
It is proposed to establish at once works sufficient to crush 100 tons of quartz per day, and as the engineer states that there is ample water-power, and an abundant supply of mineral, a second set of works can be erected as soon as the first has, by its working, established the remunerative character of the undertaking.

A powerful company has been formed in Glasgow for the purpose of working extensive mining rights of a similar nature in this district, some of which adjoin the above-mentioned properties, and arrangements are contemplated for the co-operation of the two companies in the erection of works on a convenient site as regards water supply, thus affording mutual support and economising expenses. Engineers, accompanied by one of the directors, have recently been commissioned to examine the properties of the Glasgow Company, and advantage was taken of their visit to obtain the examination by them of the properties now to be acquired by this company. It is in consequence of the report of these gentlemen that the Glasgow Company have decided to commence their operations on the adjoining estate, and it is on the report and information thus obtained from disinterested parties that it has been decided to place the present enterprise before the public.

The following are some of the peculiar advantages of the properties acquired by this company, viz.:—

- 1.—They are within 30 miles of Ootacamund, the summer seat of the Madras Government, and under British rule and law.
- 2.—They are easily accessible, and in telegraphic communication with London.
- 3.—The form of the reefs makes them immediately available, so that neither time nor money need be sunk in unproductive works.
- 4.—There is ample water-power, and timber is plentiful.
- 5.—Native labour is cheap and abundant.

The accompanying map shows the position of the mines relatively

to Ootacamund, the Malabar Coast, and the Indian railway system; it may be added that a line is projected connecting Mysore with the Malabar Coast, which will pass close to the properties.

This company is pronounced by the vendors of the properties, by whom the consideration to be paid for them, including crushing stamps and machinery, as mentioned in the contract, has been fixed at £33,000 fully paid up shares of £1 each, and £7000 cash, for which the vendors further undertake to defray all the expenses incident to the formation of the company, leaving the remaining half of the capital entirely available for the development of the works.

The following agreements have been entered into:—

1.—Sundry letters between William Lonsdale and Alexander Wright, from Feb. 17, 1879, to Nov. 20, 1879, and between William Lonsdale and J. W. Ryan, dated July 8, 1879, under which the mining and water rights were acquired by William Lonsdale, agent for John Bell.

2.—An agreement dated July 29, 1879, between Gustavus Palmer Harding on the one part, and John Bell of the other part.

3.—An agreement dated Dec. 4, 1879, made between Gustavus Palmer Harding of the first part, John Bell of the second part, William Lonsdale of the third part, and Jonathan Aldous Mays, as trustee for the company, of the fourth part.

These agreements, together with the Memorandum and Articles of Association, can be seen at the offices of the company, and of the solicitors.

Prospectuses and forms of application for shares can be obtained at the offices of the company, or from the solicitors.

If no allotment be made, the amount paid on application will be returned in full.

London, Dec. 5.

No.....

THE SOUTH INDIAN GOLD MINING COMPANY (LIMITED).

FORM OF APPLICATION FOR SHARES.

To the directors of the South Indian Gold Mining Company (Limited), 31, Tower Chambers, Moorgate-street, London.

GENTLEMEN.—Having paid into your bankers the sum of £....., being the amount of deposit of 2s. 6d. per share on shares of 1l. each in the South Indian Gold Mining Company (Limited), I hereby apply for that number of shares, and agree to accept such shares, or any smaller number that may be allotted to me, and to pay the amount due thereon according to the terms of the prospectus of the company, dated 5th December, 1879, and I authorise you to place my name upon the register of members in respect of the shares so allotted.

Signature

Name in full.....

Residence

Profession or occupation

Date

December, 1879.

SOUTH WHEAL CREBOR, LIMITED,

Average Analysis

Of five Samples

31·3 Copper

Now in

Full work,

Adjoining

Wheal Crebor.

Ekins & Co.,

14, Queen Victoria St.,

London, E.C.,

Can supply

South

Wheal

Crebor

Shares

At 27s. 6d. per Share,

Fully paid.

Mining Correspondence.

BRITISH MINES.

ABERLLYN.—John Roberts, Dec. 3: Monthly Report: During the past month we have raised in the great stopes, by eight men, about 30 tons of blonde. The stopes at the extreme top are not looking quite so well, as the lode seems to be disordered a little by a slide. The lode altogether is nearly 4 fms. wide, which necessitates our leaving the stuff remain on the stall for the men to work. Of course we throw down a great deal, but can manage as yet to keep the crusher going. In the stope in the shale the lode is cut off by a slide, or rather what might be termed a flat... This is only temporary, or at least I believe so, and we are rising through it. We have raised from this place about 3 tons of blonde, by two men. We have not yet holed the rise from the No. 3 to the winze from No. 2, although they are so near that they can hear calling from one place to the other for nearly a month past. There is a very hard layer of rock which came across the bottom of the winze a month ago, and is now in the rise. I expect, however, every day to get a communication. The rise has passed through some nice bunches of blonde, which we shall take away as soon as we get through to the winze. This communication will make the ventilation in this part of the mine perfect, and I purpose in the forebreast to start a cross-cut west that will cut through the great blonde lode 17 fms. deeper than we have seen it to be in the run of the course of blonde. I anticipate finding lead here, for if we do not get lead under the blonde it will be quite contrary to the general experience of miners. In the Valley cross-cut, I propose putting a full party of men to hasten it on as fast as possible. Although we started this cross-cut in a lode, or the outcrop of a lode, unless our main lode be thrown down east very much by the influence of the mountain I can hardly think that we have yet. According to its bearing in the No. 3 adit we have about 23 fms. to drive to cut it, that is at the nearest point, but by driving in a more northerly direction, and cutting it in about 30 fms.—that is, on the junction of the north-east and south-west lode—we shall gain nearly 20 fms. towards the No. 3 adit. So little has been done on this caunter that one cannot form an opinion as to its merits, but one can scarcely help thinking that it will produce good results in conjunction with the great lode. It is trite to say that the ground in the cross-cut is highly mineralised, but it is quite true. We have strong patches of blonde and sulphur and also spots of lead, which lead me fully to expect good results when the lode is cut. I intended to have sampled 50 tons of blonde this week, but a severe frost has set, which I am afraid will prevent my doing so. The new stonemaster, as well as all the other machinery, continues to work exceedingly well. I hope that we shall get the new Jigger to work next week. This Jigger will receive the stuff from the last compartments of the other Jiggers, falling in it by its own gravity, and thus finish the jiggling without stopping the crusher or extra manual labour.

BEDFORD UNITED.—R. Goldsworthy, Dec. 4: Setting Report: To drive the 138 east, by four men, at 10f. 10s.; lode worth 12f. per fathom. To rise in the back of this level, by six men, at 12f.; lode worth 10f. per fathom. To drive the 127 east, by six men, at 11f. 10s.; lode worth 10f. per fathom. The cross-course is not yet intersected, but we are expecting to cut it every day. As the ventilation is rather defective, we have suspended stoning, and put the men to sink a winze in the bottom. When this winze and the rise in the back of the 138 is communicated it will give good ventilation, and also lay open ground for stoning. This winze is let to six men, at 12f. per fathom. To drive the 115 east, by four men, at 11f. 10s. per fathom. The lode is producing good stones of ore, and all though not sufficient to value, is promising for early improvement. Two stopes, one in the back of the 128, by two men, at 3f. 10s., and in the back of the 127 west, by two men, at 4f. 5s. per fathom. These stopes are worth on an average 9f. per fathom. Two tribute pitches, one in the back of the 115 east, by four men, at 10s. in 1f., and one in the back of the 103 west, by two men, at 12s. in 1f. We sampled on Friday a parcel of good quality copper ore (computed) 58 tons.

BETTSWS-Y-COED.—Charles J. Sims, Dec. 4: The lode in the 30, west of flat-rod shaft, maintains its value for lead ore (25 cwt. per fathom), and is still of the same masterly appearance. In the 30 east the lode is larger, being from 3 to 4 ft. wide, and worth 1 ton of lead ore per fathom. The several stopes maintain their average value. There is no surface water, owing to the protracted dry weather, followed by this severe frost, but we are pumping water enough for dressing purposes, and I am pleased to say the dressing is going on satisfactorily. We are erecting a large shed to cover in the dressing-floors.

BLUE HILLS.—S. Bennetts, P. Vian, Nov. 29: The 42 ends, east and west of shaft, are producing some little tinstuff, but not of much value. A stope in the bottom of the 30, west of the shaft, is worth 7s. per fathom, and the 30 east end 15s. per fathom. The tribute pitches are without much change.

BODIDRIS.—H. Hotchkiss, Dec. 3: The bottom level going east from the new shaft on the Maes-y-pwll lode is being urged forward as fast as the nature of the ground will admit, which is hard, but the lode strong and promising, with a good quantity of slate and blonde. In the 30, west of said shaft, the ore keeps about the same as it was last week. In the 17, east of shaft, the ore in the present forebreast is not so strong to-day as it was last week, having become pinched up by a hard rider on the heading side. This is only temporary, as it will open again when we pass this. I may say that we are leaving ore both in the roof and sole of this level to be taken away by stoning after this level is communicated with the bottom level further east. In the 45, east of engine-shaft, I have nothing of importance to report on. The hard frost which has set in this last week has stopped our dressing. The frost in Meadow shaft is very much against us at this work, so I have put the men to quarry stone.

BWLCH UNITED.—Nicholas Bray, Dec. 2: The lode in the 70, driving east of Ritchie's shaft, is without any new feature to mention since my last report; it is still very large, and producing a little lead and blonde. The stope from the end of the winze in the back of the 70 has improved, and yielding very good saving lead orestuff for dressing. The stopes in the 60 are also producing very fair average stuff. The lode in the bottom (or 100) level is not quite so productive, owing to a joint crossing the forebreast; but this is not an unusual occurrence, and I do not attach much importance to these changes, as the indications in this drivage (as already stated) seem to warrant the opinion that we are merely skirting the top of a deposit of ore. I have taken the men for a few days out of the 80 to form a passage from the end of the shaft to deposit the stuff from the different workings; this will secure the ground, and avoid drawing the waste stuff to surface.

CLEMENTINA.—J. Roberts, W. Sandoe, Dec. 3: The lode in the north end, at the bottom of the engine-shaft, is very much the same as when last reported, with the exception of not being quite so good for lead in the bottom. The south end at this level is showing a wider lode, but the ground is much the same. The stope in the bottom of the 25, on the east and west lode, is without any change to note. The trial to the west of this stope is still looking favourable, and showing good seams of lead. We have not been able to do anything in the road-side shaft for the week, owing to the scarcity of water. The dressing is also impeded by the same cause.

COMBMARTIN.—J. Harris, J. Comer, Nov. 29: We have to-day set the following bargains:—The winze to sink below the 12, by six men, at 5f. 10s. per fathom, the month. The lode is 3 ft. wide, with veins of quartz and white iron, and sprinkled throughout with lead and blonde. The adit level to drive north-west on caunter lode, by six men, at 4f. per fathom, the month. The lode is 3 ft. wide, a large portion of which is friable quartz, with nice prismatic joints, and we occasionally meet with good stones of lead and blonde, and the lode has a most promising appearance for meeting with lead. The adit cross-cut to drive by six men, at 6f. per fm., the month. The killas is of the usual character, and in which we meet with small branches of quartz, spotted with lead and blonde, but we have not yet touched Harris's lode.

COMBMARTIN.—T. Comer, Dec. 4: The lode in the north-west adit end has greatly improved in appearance during the week; in fact, the lode is looking more promising now for meeting with a good deposit of lead than I have ever seen it since we passed through Harris's cross-course. The lode is the full size of end (5 ft.), composed of friable quartz, intermixed with lead and blonde, and a nice flookan footwall, with a seam of mundic from 2 to 3 in. thick running along on it. The lode in the winze sinking below the 12 has also improved, producing more silver-lead ore, and the ground about the lode is much easier, which enables the men to make better progress with the sinking. In the adit cross-cut, driving north, we have just cut into another branch, carrying mundic and spots of lead, and the end in letting out a little more water.

CORNWALL GREAT CONSOLS.—Henry Miners, Dec. 2: I am glad to be able to report that the operations throughout the mine are progressing vigorously, with most satisfactory results. In a few days we shall have a lot of men raising tin on the tribute system in various parts of the mine, full details of which shall be given in my next report.

CROOK BURN.—Wm. Vipond, Nov. 29: The men got a great deal more water in the shaft yesterday morning about three o'clock; they have been drawing this continuously since. I was here to see it yesterday afternoon, but they were not lowering it at all. Two of the men have come on this morning to tell me that they can just about draw the water when they are at it unceasingly, but when they stop a short time to get their meals it gains upon them, and they cannot make up what they have lost. It is evident that pumps will have to be put in to overcome this. The next consideration is what to do with the men in the meantime. Some of them might be put to quarry stones either for wheel-pit or steam-engine, but it is wretched weather here at present for any sort of outside work.

CWM PRYF.—Abel Salom Francis, Dec. 1: The lode in the deep adit level driving east is in whole ground to surface, and having a back or 70 fms. will yield for the part carrying about 15 cwt. per fathom, and is daily improving. The lode in stripping down behind the present forebreast will yield 1 ton per cubic fathom. We have cleared the Medway level 10 fms. over adit, into the eastern pass. From this pass eastward the portion of the ground standing unwrought will be let on tribute of 6f. per ton of clean ore, delivered in the ore bin at the mine. The ore ground over the No. 2 adit (20 fms. over the deep adit) for 40 fms. long is being worked on tribute at 6f. per ton, and as soon as the machinery is erected the number of men will be increased so as to secure good returns and profits. All the work at surface is proceeding satisfactorily in every department.

CWMSWITH.—Dec. 3: The lode in the 15, east of Pugh's cross-cut, is getting more defined, and is now taking a more southerly bearing; this we are pleased to see, as it corresponds more with the ore-bearing part of the lode; therefore we may expect a further improvement soon. Our progress during the past fortnight has not been so good, as our water-engine has been frozen up, and we have had to drive by hand labour. In the same level driving west the ground has become easier for driving, and the lode has improved in appearance (it has looked very poor); it is now 18 in. wide, worth 12 cwt. of lead ore per fathom. The lode in Gill's lower level, driving west of No. 1 winze, is 3 ft. wide, composed chiefly of blonde, but yielding nice stones of lead in the blonde, worth for blonde 1½ ton per fathom; the ground has been rather tight for driving, but has eased a little in the past week; we shall communicate about the time named—by our next setting day. In the 12 cross-cut, over Gill's, we have intersected some small branches producing some nice stones of lead and blonde, and underlying north; we are induced to believe they are branches of the new lode, as all the lode and branches in this western part of the mine are south underlays; we have tried a little on them, but we are not quite satisfied that it is the main part of the lode, we shall, therefore, drive the cross-cut further north, as similar branches were met with in the 15 cross-cut north before cutting the main part of the lode. Our stopes and pitches throughout the mine are looking quite as well, and producing as for some months past. The severe frost, with occasional falls of snow, have completely blocked up all our machinery, and our dressing is now at a standstill. Samples of 50 tons of lead and 50 tons of blonde were sent out yesterday, for sale on the 15th instant.

D'ERESBY CONSOLS.—J. Roberts, W. Sandoe, Dec. 3: We have driven in the

past month in the adit towards Cobbler's lode a little more than 2 fms. At the present moment the ground is much more kindly than we have seen it at all, and we have very strong hopes that the lode is close by. There is more water issuing from the end, and more quartz in the ground, and larger veins of quartz crossing the end, containing nice gossan, and the water is strongly impregnated with oxide iron. We hope that by the next meeting we shall have cut the lode. We send you per rail the plan, that you may see just exactly our position.

D'ERESBY MOUNTAIN.—J. Roberts, W. Sandoe, Dec. 3: The stops at No. 2 are looking much the same; worth 1 ton per fathom for the width of the lode. At the No. 5 we are putting in tramway from Gorse shaft to the sump and stope, and shall complete it to-day. The tramway will dispense with the wheeling of the stuff, as the kibbles to be drawn to surface will be filled by the sump and brought to the shaft on the trolley, and so spare the cost of two hands. We have opened the space between the level and the large chamber below, and shall hang a windlass forthwith, when the stoping will be carried on without any interruption to the sump-men. The lode is looking quite as good throughout as we have reported it before. The scarcity of water prevents very much our progress in dressing; and now severe frost seems to be set in, that makes it still worse.

DERWENT.—John Morphet, Dec. 2: I beg very respectfully to inform you that during the few days that have elapsed since I posted the setting-report none of our workings underground have undergone in regard to value any change worth naming.—Jeffrie's Shaft, Middle Vein: The 95 east is still 8 ft. wide, and yielding 16 cwt. of ore per cubic fathom, or 21 cwt. for the full width. The stopes in the back yield—No. 1, 11 cwt.; and No. 2, 14 cwt.; and the flats 15 cwt. The five stopes in the back of the 93, west of shaft, are worth as follows:—No. 1, 11 cwt.; No. 2, 10 cwt.; No. 3, 22 cwt.; No. 4, 13 cwt.; and No. 5, 13 cwt.—Sun Vein: Upon this vein the 70 east yields 9 cwt., and a pretty looking little vein 3 ft. wide.—Westgarth's Shaft, Middle Vein: Here in the back of the 93, east of shaft, we have seven stopes—No. 1 is worth 16 cwt.; Nos. 2 and 3, 17 cwt. each; No. 4, 12 cwt.; No. 5, 17 cwt.; No. 6, 28 cwt.; and No. 7, 22 cwt. The bannins rising and stoping (length of working 13 feet) some 48 fms. east of shaft is 8 ft. wide, and worth 23 cwt. of ore per cubic fm., or 4½ tons for the entire length. We made a start yesterday morning to cross-cut northwards the north vein at the bottom of great limestone, opposite Westgarth's shaft at the 93, by hand labour till we get in a few feet, and so obtain a firm roof to fix pillars or column of timber that carries the boring machine to. In a few more days the machine at this point will be started, and having put both the steam-engine and the compressor into a good state of repair I expect we shall soon be able to report to you rapid progress. The 74, west of Westgarth's, is without change. Very severe weather—both snow and frost.

DEVON GREAT CONSOLS.—I. Richards, Dec. 4: Wheal Josiah, New South Lode Shaft: During the last month the 130 west has been driven 1 fm. 3 ft. 6 in., the lode proving 1½, 2, and 2½ ft. wide, composed of capel, quartz, peach, mundic, and a small quantity of copper ore. The 115 west has been driven 2 fms. 1 ft. 6 in., the lode proving 1½ and 2 ft. wide, composed of capel, quartz, and some copper ore of good quality.—New Shaft, New South Lode: The 205 west has been driven 5 ft., the lode—part carried 3 ft. wide—being composed of capel, quartz, peach, floor, a small quantity of copper ore, and 3 to 4 tons mundic per fathom. Dawe's cross-cut south, at the 190 east, has been driven 2 fms. 1 ft. 9 in., the ground being tolerably favourable for driving and congenial for mineral. The 137 east, east of Friend's cross-cut, has been driven 3 ft. 2 in., and the lode, or portion of which left standing to the north for more speedy progress in driving, has been cut through, proving to be of large size—7 to 8 ft.—and of a very fine appearance, being composed of capel, quartz, peach, prian, fluor, mundic, and some copper ore of good quality.—New Shaft, New South Lode: The 205 west has been driven 5 ft., the lode—part carried 3 ft. wide—being composed of capel, quartz, peach, floor, a small quantity of copper ore, and 3 to 4 tons mundic per fathom. The 190 east has been driven 1 fm. 3 ft. 9 in., the lode—part carried 3½ ft. wide—being composed of capel, quartz, peach, prian, and fluor, and worth 2 tons of copper ore, or 6cwt., and 3 tons of mundic per fathom. The 190 west has been driven 1 fm. 1 ft. 6 in., and intersected a portion of the south part of the lode, which proves to be 4 ft. wide, composed principally of capel, with a little copper ore and mundic interspersed throughout. It being considered that another portion of the lode is still standing south, the cross-cut will be continued some distance further in that direction for proofs of same. James's Rise in the back of the 190, has been put up 1 fm. 4 ft. Rising here has been carried by the side of the lode for more speedy progress. The 175 west has been driven 2 fms. 3 ft., the lode proving 3 to 3½ ft. wide, composed of capel, quartz, peach, and copper ore, worth 1, 2, and 3 tons, and an equal quantity of mundic per fathom. Its present value is 3 tons of copper ore, or 9cwt., and 3 tons of mundic per fathom. Bartlett's winze, in the bottom of the 175 west, has been sunk 1 fm. 5 ft., the lode—part carried 3 ft. wide—being composed of capel, quartz, peach, prian, and fluor for length of winze—9 ft.—2 tons of copper ore, or 6cwt., and 3 tons of mundic per fathom. The 175 east has been driven 1 fm. 10 in., the lode proving 4 ft. wide, composed of capel, quartz, peach, fluor, mundic, and some good quality copper ore. The 100 east, on the south part of the lode, has been driven 2 fms. 1 ft. 4 in., the lode proving 2 ft. wide, composed of capel, quartz, peach, and a small quantity of both mundic and copper ores.—Railway Shaft: The Railway shaft has been sunk below the 175 fms. 2 ft. 6 in., by the side of the lode, the ground being favourable for progress. The 175 east has been driven 3 fms., the lode proving 1½ ft. wide, and worth for this distance, on an average, 4 tons of copper ore, or 12cwt., and 4 tons of mundic per fathom. The 175 west has been driven 2 fms. 1 ft. 8 in., the lode varying in width from 2 to 5 ft., and worth 1, 2, and 3 tons of copper ore, and from 2 to 4 tons of mundic per fathom. Its present value is 3 tons of copper ore, or 9cwt., and 4 tons of mundic per fathom. The 160 west has been driven 1 fm. 4 ft. 10 in., the lode proving 3 ft. to 4½ ft. wide, and worth 2 tons of copper ore, or 6cwt., and 4 tons of mundic per fathom. Fox's winze, in the bottom of the 160 east, has been sunk 1 fm. 3 ft., the lode proving, for the first 6 ft. sunk, worth 2 tons of copper ore, or 6cwt., and 4 tons of mundic per fathom. From this point to the deepest point reached it is composed of capel, quartz, peach, a small quantity of mundic, and some copper ore of good quality. This falling off may be considered as only temporary, as at the level below—the 175—for several fathoms in length, the lode is in a good course of ore; it is, therefore, hoped that it will soon again improve as the sinking progresses.

DUBBY SYKE.—Wm. Vipond, Nov. 28: Mr. Tallentire finished the sinking of the 10 fms. of shaft on Wednesday. There is nothing new to report from it. I have set the men a bargain until the end of the month to sink the shaft the same size as previously, put in partitions, platforms, ladders, &c., at 22s. per fathom. The bargain is set to 12 men. Ten are working at it now, and I shall make them two more as soon as I meet with suitable men for the job.

EAST CRAVEN MOOR.—D. Williams, Dec. 4: The 54, west of shaft, has been extended 20 fms. 4 ft.; driven during the month, 3 fms. 3 ft. The vein here during the last few days has been much broken, disordered, and heaved south by an oblique cross-joint having passed through. The same is again improving, and opening out very satisfactorily, being fully 2 ft. wide, and producing stones of ore. A stope in back of level, in a vein 3 ft. wide, is worth 20 cwt. of lead ore per fathom. The 54 east is extended from shaft 22 fms. 5 ft. The vein here is daily improving, and presents favourable indications of soon reaching the second run of ore ground, which proved very productive in the level above; at present it is 18 in. wide, very porous, and letting out water freely, and carrying a good mixture of limespars, sulphate of barium, and lead ore, being indisputable evidence that the vein will become as wide and as rich as ever. A stope in back of the level is worth 30 cwt. of lead ore per fathom. The 30 west has been extended upon the main lode 70 fms. 6 in.; driven during the month, 6 fms. 6 in. The cross-cut south to the parallel veins from the 42 is 15 fms., and the drivage south

stuff direct to our stoves and pitches, and thereby enable us to work the ground more safely and economically, and to raise larger quantities of ore. We have sampled 100 tons of blonde, for sale on the 5th proximo, and are preparing other parcels of lead and blonde, which we hope to sell before the end of December.

GAWTON COPPER.—George Rowe, George Rowe, jun., Nov. 29: The lode in the 117 east is improving both in character and for progress, with good stones of ore, altogether of a very kindly appearance. The lode in the 105 east is also improving, with arsenical mundic and ore to the value of 8d. per fathom. The lode in stope in bottom of 105, east of winze, is yielding 15 tons of arsenical mundic mixed with ore, and worth 12d. per fathom. The lode in the stope in the bottom of the same level, west of said winze, is worth 12d. per fathom. The lode in the stope in the back of the 105 is worth 12d. per fathom. The stope in the bottom of the 95 are suspended. Other points are without change.

GLENROY.—Richard, Nov. 29: Since last report the lode in both ends for character is better than I have seen since we commenced to drive. The south end is now the width of the level with two good walls made up with kindly spar and good rock with a little jack mixed. The lode in the north end is getting harder, and the spar more kindly for ore. Although the lode in either end is of no value as yet, still there is a great improvement to the upper levels, and in my opinion both ends will make ore when we get under the ore ground seen in the levels above. The weather is still very dry and frosty, and the water low, so we are using steam by day and water by night. All is going well.

GREAT DYLIFFE.—R. Dean, Dec. 3: Herewith I beg to hand you the setting report for the current four weeks as follows:—Llechneiddu: The 125, driving west of Bradford's shaft, by six men, at 105s. per fathom; this end is much the same as last month. We have driven over 4 fathoms, but have still some months' work to reach the run of ore east of the engine-shaft. The stope in the back of the 115, east of Alfred's winze, by six men, at 20s. per fathom, and 70s. per ton of ore; this stope is steadily improving, blonde giving place to lead ore. The stope in the back of the 95, west of Bradford shaft, by eight men, at 45s. per fathom, and 30s. per ton of ore, worth about 12d. to the fathom. The 105, driving east of the engine-shaft, by six men, at 90s. per fathom; the lode is here split in two, we are driving on the south branch, and expect the two branches to come together in 4 or 5 fathoms' driving. The trial stope in back of the 105, east of the engine-shaft, is set to four men, at 20s. per fathom, and 80s. per ton of ore; it is looking much better than last month. We have seven tribute pitches, set to 30 men, as follows:—Twelve men at 80s. per ton of ore, and 18 men at 100s. per ton of ore.—Dyliffe: We have four tribute pitches on this lode, set to 10 men, at 100s. per ton of ore.—Esgairgaled: We have one tribute pitch on this lode, set to two men, at 100s. per ton of ore. We sold to-day 40 tons to Messrs. Sheldon, Bush, and P. S. Company, at 11s. 16s. 6d. I am sorry to say that we are having very severe frost, and have not been able to dress ore this week in consequence. We are taking this opportunity to put in new crusher stalls.

GREAT RETALLACK.—J. Harris, Dec. 1: The ground in the shaft sinking from surface has very much improved since I last wrote you, it being a beautiful friable killis with pranly joints, and I am hoping the ground will continue, and the men will make good progress in their sinking.

GREEN HURTH.—Wm. Vipond, Nov. 28: Swan's Shaft: We think that we have got the limestone in this—at least we have come upon something hard last night, and I do not see it can be anything else. We shall see to-day very likely what it is. The water continues so far about as it has been—about 100 gallons per hour. We may yet clear of some of it if we were through the first post and the black bed.—Vipond's Sump: The south end from this in the 30 is still fully worth 9 tons per fathom; plate the whole height of the level on the east side. The north end of the 30 is yielding 1 ton of ore per fathom. The men seem to be coming into better ore on the east side.—Robinson's Sump: We have no ore in this at present. I hardly think we are fairly into the vein yet, at least into the bearing part of it.

—Wm. Vipond, Dec. 3: Swan's Shaft: This is very hard and the water troublesome. From these causes they have made so little progress this week that I can hardly say certainly if it is the limestone they have got, but I do not see that it can be anything else.—Vipond's Sump: The end of the 30 south continues fully worth 9 tons of ore per fathom; going steadily on with a plate-cheek on one side. The north end of the 30 continues about as usual, worth 1 ton of ore per fathom; more softness on the west cheek of this, but very hard on the east side. Robinson's sump is now down 13 fms., fully as deep as the first one. The men are squaring this up and timbering it to bottom, when they will commence to drive south to meet the north end of the 30.

GRIFFIN.—Chas. Kneebone, Dec. 3: We are progressing favourably with the drive of the 15 east towards the Griffin lode, and to-day I notice several small strings of lead in the quartz. I have let a rise to two men, 5 fathoms south from the engine-shaft, at 34s. per fathom, producing stones of lead, but not yet to value. This rise is immediately under a nice bunch of lead ore, which we are working above the 10, and will serve the double purpose of a footway and a point to take off stope, over the 15. The 10 north is now impeded to 2 tons per fathom for width carried (4 ft.)—full size not known; the ground has also improved, and we are making good progress. The main adit on Griffin lode north is improving in character, and carrying a leader 2 ft. wide, of flockan, prian, and lime spar, with nice specimens of lead ore, and letting out water freely—a very encouraging end. No. 1 stope, above the 10 north, is slightly improved. No. 2 stope, south of the shaft, is without change, worth 1 ton of lead ore to the fathom. The Cwrt Llanerch adit is without change. We commenced crushing ores on Saturday, to expedite which I have ordered new jaws for our crusher. The engine and machinery are working well.

GROGWYNION.—J. Kitto, Nov. 29: I have nothing particularly new to report to you since my last. The ends have not been so productive during the last week or two as they were before; but this falling off is, in all probability, only temporary. There is a good stone of lead in the level, which is being driven about north-east on a cross-course in the deep adit, and I have but little doubt that this will lead on to another lode still further north. We have about 2 fms. of ground more to take away between the top of the rise above the deep adit and the winze sinking below the 55, to communicate the two levels. This will be completed in a few days at most, when both levels will be well ventilated, and we shall be in position to commence several new stope in good ore ground. The deep adit level cuts towards the south part of the lode is progressing satisfactorily, and fair progress is being made. The stope throughout the mine are looking very well, and are yielding about the same quantity of ore as for some months past. We have sold for the past month to the Par Smelting Company 100 tons of lead ore, at 11s. 10s. per ton, and hope to sell the same quantity for the current month.

GUNNSLAKE.—W. Skewis, J. C. Secombe, Dec. 3: The lode in the 224, east of engine-shaft, is disordered by a cross-course. The lode in the western end is worth 6d. per fathom. The lode in the 212 is producing saving work. In this level west the lode is worth 7s. per fathom. The lode in the 200, east of engine-shaft, is worth 6d. per fathom. The lode in the 188, east of engine-shaft, is worth 6d. per fathom. We have communicated the rise in back of this level with the 176, which is giving good ventilation to both levels. There is no change in the cross-cut south. The lode in the 176, east of engine-shaft, is worth 5d. per fathom. The stope are producing about their usual quantity of copper ore.

HERODSFOOT.—P. Temby, Dec. 4: The lode in the new shaft sinking below the 205 is much larger, and letting out more water. We have to-day commenced to drop an 8-in. lift, so that this water may be kept out by the engine instead of hand labour. No. 1 and 2 stope, over the 205, still hold good, and worth 20 and 25 cwt. of lead per fathom. The mine throughout is much the same as last week. At the 70 the lode was taken down to-day; it is a very good lode, and worth about 10 cwt. of lead ore per fathom. The weather is very much against our dressing; the rivers are almost frozen up.

HINGSTON DOWN.—T. Richards, Dec. 3: There is nothing new in the drivages on the course of the lode east and west of the adit level south; the lode is still very promising, and producing rich stones of copper ore. We have commenced opening ground eastward from the adit cross-cut for the shaft, and as soon as this severe weather changes we intend commencing the shaft from surface.

LADYWELL.—Arthur Waters, Dec. 4: The adit and 20 fm. levels are without material change since my full report was written the other day. I would remark that I like the look of the adit, and shall bring a box of the orestuff lately broken from it when I come to the meeting next week.

LEADHILLS.—Dec. 4: Telegram received from the agent at the mine:—"Just up from Brown's, forebreast; has improved to 6 tons of ore per fathom above, but is worth 9 tons in the bottom of the level."

LLANDEGLA.—Dec. 3: The whim-shaft, 36 yard level east, the lode in the forebreast is 2 ft. 8 in. wide, well defined, has two good sides, and has a bold and more promising appearance than I have ever seen since our commencement here. I believe we are about entering the ore ground seen in the level above. There is no ore to be seen in it yet, but has every indication of some near by. The new shaft is down 3 fms. 3 ft. from surface. The ground is much the same for the last few yards, being blue clay and boulders of limestone. There is some spar to be seen in it now, with sulphur, and we found a few spots of lead ore in it yesterday. This speaks as if we shall meet with something good when we get through this ground.

MARKE VALLEY.—W. George, J. Stanlake, Dec. 4: Since our last report the 90 end has been continued, but the progress made has not been so satisfactory as we could desire, in consequence of the want of necessary ventilation; the lode is still regular, and the ground of a favourable character. Throughout the other parts of the mine there is no particular alteration in the different valuations given.

MELLNEAR.—John Gilbert, Dec. 3: The lode in the rise in the back of the 20, west of Gundry's shaft, is 2½ ft. wide, and producing good stones of copper ore and some saving work for lead and blonde. The lode in the 40, west of shaft, is 2 ft. wide, and yielding ½ ton of copper ore per fathom, and a little saving work for lead. The lode in the 50, west of shaft, driving west on the south-east part, is 2 ft. wide, and producing good stones of copper ore, but not sufficient to value. The lode in the 60 fm. level, west of shaft, driving east on the south-east part, is 2 ft. wide, and yielding 1 ton of ore per fathom. The lode in the rise in back of this level is 2 ft. wide, and still yielding 1 ton of ore per fathom. The lode in the 70, west of shaft, is 3 ft. wide, and yielding 2 tons of ore per fathom. The lode in the 70, west of shaft, driving east on the south-east part, is 4 ft. wide, and yielding 2½ tons of ore per fathom, and looking promising to improve. The lode in the 80, west of shaft, is 5 ft. wide, and yielding 4½ tons of ore per fathom. The winze in the bottom of this level is yielding 3 tons of ore per fathom. The lode in the 90, west of shaft, is 4 ft. wide, and yielding 1½ ton of ore per fathom. We expect this level to further improve, as it is now getting just under the winze sinking in the bottom of the 80 fm. level. The winze sinking in the bottom of the 90 fm. level, east of shaft, is still yielding 3 tons of ore per fathom. The lode in the 100 fm. level, west of shaft, is 5 ft. wide, and yielding fully 3 tons of ore per fathom. This end is still very wet, but the ground is a little better for driving. The lode in the 100, east of shaft, is divided by a horse of killas, but I think it will wear out again very soon, and the lode resume its former value. This end is now yielding about 2 tons ore per fathom. Gundry's shaft is now down to the required depth for the 110. We shall commence this week to drive a cross-cut north to intersect the lode. We calculate to meet with the lode by driving about 3 fms. The lode in the 100, driving west of the skip-shaft, is 3 ft. wide, and producing some saving work for copper ore—a very promising looking lode. All the stope are looking very well, and maintain their yield of copper ore.

MELYN DWB.—J. Kitto, Nov. 29: Since my report we have cut a very strong feeder of water in the 25 fm. level cross-cut, which seems to indicate our near approach to the lode, and I hope shortly to be able to advise you of its intersection. There is no other change to notice.

MINEHILL CORPORATION OF GREAT BRITAIN.—William Bennett, Dec. 3: Hafna, High Hafna, and Great D'Eresby: Since Saturday last the

frost has interfered with our surface operations. It looks as though we should have a change shortly, when our crushing and dressing operations will be pushed forward with all speed. There is no particular change underground, but in No. 3 adit the lode in the stope is looking very well both for lead and blonde ores. At No. 5 deep adit (Great D'Eresby) the ground is looking much more favourable for driving. During the week (five days drivage, as on Saturday the men were engaged in putting in tramroad, &c.) the adit has been advanced 1 fm. 3 ft. 6 in.

MONYDD GORDDU.—James G. Green, Dec. 4: The 24 west is still driving in a fine lode, containing more blonde than lead at present, but this may change any day; value, 1 ton of lead and 1½ ton of blonde per fathom. There is no other change calling for remark. Next Friday being our measuring and setting, a full detailed report shall be forwarded you. Severe frost has set in, completely hindering any slime dressing, but we have managed to keep the wheel going so far. I am afraid, however, that we cannot continue after to-morrow, unless a change occurs.

MORFA DU.—T. Mitchell, Dec. 4: We have no change here since my last report.

NEW CATHEDRAL.—S. Davy, Dec. 4: Having drained the mine 3 fathoms below the 30 we are now clear of the extensive excavations, and for the present we shall not proceed any deeper, this being sufficient for the fixing of the plunger-lift, and having also cleared and drawn to surface all the former pitwork as deep as to the 42, and taken aside all the cisterns and bearers. We are now engaged in cutting ground for the reception of larger, and as soon as this is completed we shall at once and with the greatest dispatch begin with the permanent fixing of the 12-in. plunger-lift. In the meantime we have cut ground and fixed bearers in the 30 for the suspension of the 12-in. bucket-lift.

NORTH D'ERESBY MOUNTAIN.—Dec. 4: The lode in No. 2 adit level is looking well for lead and blonde ores; in driving this end we are opening out good ground for stoping. I again recommend the driving of the No. 1 adit to as far as the 42, and taken aside all the cisterns and bearers. We are now engaged in cutting ground for the reception of larger, and as soon as this is completed we shall at once and with the greatest dispatch begin with the permanent fixing of the 12-in. plunger-lift.

PANDORA.—H. Nottingham, Dec. 3: New Lode: There is no further change in the 33 end since my last report, but letting out more water, which in this place is a good indication. The stope north of No. 1 winze is now out of the pend in the lode; worth, in its usual width, 1 ton of lead and 1 ton of blonde to a fathom. Goddard's Lode: The 33 driving south on this lode is still unproductive, but showing more favourable indications in the way of spar, blonde, and an increase of water issuing from the lode. We have yet some fathoms to drive to No. 2 run of ore ground as seen in the level above. The stope north of No. 1 winze over this level is worth 15 cwt. of lead and the same of blonde to a fathom. New Lode: The 23 going south is showing faces and small joints of lead all through the ground, but forming no body yet. At No. 2 winze sinking under this level we have again overtaken the water, and are in consequence obliged to suspend the sinking for the present. The lode here is wide and strong, and worth about 15 cwt. of lead and the same of blonde to a cubic fathom. No. 2 stope over this level is worth 15 cwt. of lead and 1 ton of blonde to a fathom.

PANT-Y-MWYN.—Enoch Parry, Dec. 4: We have no change to report in this mine since last week. Owing to the severe weather and the smallness of dressing-floors, we cannot dress the ore as fast as we are raising it; we are, however, making arrangements to heat water for the dressing-floors with the exhaust steam, and are enlarging the floors.

PARRY'S COPPER CORPORATION.—T. Mitchell, Dec. 4: The 90 south continues to improve in appearance, and as we are now getting near the point where we expect to meet with copper we hope our anticipations will soon be realised. We are getting good stones of ore from the forebreast this last day or two. All other points looking much as usual.

PATELEY BRIDGE.—C. Williams, Dec. 4: The 40 west is driven from shaft 15 fms. 5 ft. The vein in the end is from 8 to 9 ft. in width, consisting chiefly of quartz, gossan, and lead ore, worth of the latter 4 tons per fathom—working by nine miners and three labourers, at 130s. per fathom. The 40 east is driven from shaft 12 fms.; the vein in the present forehead is 6 ft. in width, and of the usual masterly character, worth 2 tons of rich ore per fathom—working by six men, at 70s. per fathom. The 30 east, on Rake vein, has been extended during the month little over 4 fms. The lode at this point is fully 7 ft. in width, consisting of gossan, carbonate of lead, and large tumblers of lead ore, embedded in the soft clayey portion of the vein, against the heading wall—working by four men, at 80s. per fathom. The 30 west, on Fielding's vein and branches, is now close upon the north division of the lode, which when opened into no doubt will be found rich in lead ore, as the stope over this point in the 20 is producing 2 tons of ore per fathom; working by four men, at 7s. per fathom. Fielding's vein, in the 20 north-west, is 4 ft. in width, and worth 2 tons of lead ore per fathom; working by four men, at 100s. per ton of dressed ore. Fielding's vein, in the sump under the 20 north-west, is 5 ft. wide, and worth 17 cwt. of lead ore per fathom; working by two men, at 51s. 12s. 6d. per ton of dressed ore. The pitch in the back, over the 30 east, is worth 1 ton of lead ore per fathom; working by four men, at 51s. 12s. 6d. per ton of dressed ore. The produce of the month amounted to 50 tons of lead ore. We are dressing and smelting another parcel of pig-lead with the utmost dispatch. Machinery working well.

PENHALLS.—S. Bennetts, P. Vian, Nov. 29: The lode in the 70 east end is producing some tinstuff, but not of much value. In the 50 north, east of cross-cut, the small lode now being opened on is regular in underlie and bearing, although poor. The 48 west is worth 5s. per fathom. The Betay lode in the 30, east of north cross-cut flat-roof shaft, is worth 4s. per fathom.

PYMPTON.—Henry Miners, Dec. 3: I am pleased to inform you we have cleared and repaired the main levels from Lee Moore and Bottles Hill to the mine, which is about three miles, and have also taken up drains in different parts of the mine, and partly repaired the deep adit level, and have men underground driving the 22, east of engine-shaft, on a large lode, the part carried being from 4 to 5 ft. wide, composed of peat, spar, and arsenical mundic, with tin disseminated throughout, being a very promising lode, and I have no doubt from its appearance by extending east good results will be met with. We have also men engaged in working over the refuse at surface for tin.

ROMAN GRAVELS.—Arthur Waters, Dec. 4: The 125 cross-cut, east of new engine-shaft, is driven 7 ft., and we have just cut into the wall of the counter lode, and hope to meet the main lode in another 6 ft. driving. There is good orestuff to be seen on the counter lode. The 110 north is worth 1 ton per fathom. The 110 south is still split up by the little cross-course, as was the case at corresponding points in the upper levels. The 95 south is worth 1½ ton per fathom, and improving again. The 50, south of Belton's winze, south of shaft, is worth 2½ tons per fathom. The 65 south is worth 2 tons per fathom, and likely to improve shortly. The stope throughout the mine are yielding their usual quantity of lead ore.

SOUTH CONDURROW.—W. Rich, W. Williams, H. Abraham, Dec. 2: The 40 end, east of King's, yields low quality tinstone. The 50 east is worth 9d. per fathom. The lode in the back of the 50 east is worth 12d. per fathom. The 60, west of Plantation shaft, carries stones of tin. The lode in the 70 west is smaller than usual, and is worth 7s. per fathom. The 70 east is worth 8s. per fathom. The 80 east is worth 10s. per fathom. The 80 west is worth 9s. per fathom. The 90 east is worth 12d. per fathom.

SOUTH CREDBOR.—J. Goldsworthy, Dec. 2: The mine has not yet been drained to allow to the work underground. The delay is owing to the hardness of the water, which is strongly charged with copper in solution, and which causes the leather to wear out quickly, and constant changings of the buckets; these are the only reasons the mine has not been drained. We shall, however, be ready to commence work underground to-morrow.

—(Telegram) J. Goldsworthy, Dec. 3: Water drained, work resumed underground.

J. Goldsworthy.—Dec. 4: The cutting of the plat in the 16 is being forced with all speed that the sinking of the shaft be delayed as little as possible; the cutting of the lode is a point of great interest. The driving on the counter lode will be resumed in the course of a day or two, as soon as the stuff is cleared which dropped from the back whilst the water was in the mine. The engine and pit-work are in good order, and working well.

SOUTH DARREN.—Henry James, Dec. 4: The lode in the 110 east is improving in size and character, being spotted with lead ore for the full width of the forebreast. In the 110 west the lode for the width of the level is producing good stones of lead and copper ores, worth the same as last reported—16s. per fathom. The 100 end is being driven by the side of the lode. The sinking of the winze in this level is progressing satisfactorily. The five stope in the back of the level will produce together 8 tons of lead ore per fathom. The 90 end is being pushed forward by the side of the lode; the

Mr. THOMAS THOMAS,
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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, DEC. 5, 1879.

IRON.	£ s. d.	£ s. d.
Pig, G.M.B., Clyde...	2 19 0	—
" Scotch, all No. 1...	3 0 0	3 2 6
" " 5 0 6 7 6	—	—
Bars, Welsh, f.o.b. Wales...	6 5 0	6 7 6
" in London...	6 12 6	6 15 0
" Stafford...	7 15 0	8 0 0
" in Tyne or Tees...	6 15 0	7 0 0
" Swedish, London...	9 10 0	—
Rods, Welsh, at works...	6 5 0	—
Sheets, Staff., in London...	9 0 0	9 5 0
Plates, ship, in London...	8 0 0	—
Hoops, Staff.,...	8 10 0	8 15 0
Nail rods, Staff., in Lon...	7 15 0	8 0 0
STEEL.	—	—
English, spring...	13 0 0	19 0 0
" cast...	30 40	—
Swedish, keg...	13 0 0	—
" fag. ham...	15 0 0	—
LEAD.	—	—
Alloys I., II., III., and IV...	£115 0 0	—
" " VI. and VII...	130 0 0	—
" W.B. (nom.)...	110 0 0	—
BRASS.	—	—
Wire...	7½d.	—
Tubes...	9	—
Sheets...	8½	—8½d.
Yel. met. sheath. & sheets	8	—6½d.
TIN-PLATES.*	per box.	—
Charcoal, 1st quality...	1 8 0	(nom.)
" 2nd quality...	1 8 0	—
Oke, 1st quality...	1 4 0	1 5 0
" 2nd quality...	1 3 0	1 4 0
Black...	per ton	17 10 0
Canada, Staff., or Gla. {	12	0 0
at Liverpool...	—	—
Black Taggers, 450 of {	35	0 0
Sheet zinc...	25 0 0	—

* At the works, ls. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX. 6s. per box more than 10 quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—There is not very much change in the position of our markets. At times in a few metals, speculation has continued, and prices have consequently fluctuated more or less. The late rise was chiefly effected by speculation, at the same time there has been a little extra demand for most markets, which is quite customary during the autumn season; and in addition to the demand from regular channels there has likewise been an unexpected revival of American business, and to this source more than any other may be attributed the speculative element which has since existed. There have been large orders placed for that part of the world in pig and scrap iron and rails; other kinds have not been so much wanted, nevertheless they are higher in price, owing to the rise in the price of coal, and the demands of the men for increased wages. The change in the position of affairs has temporarily led to improved rates, but the productive power of the country has again been set to work, and supplies are now apparently in excess of the demand. In confirmation of this, reference need only be made to the increase in public stocks. Legitimate trade has comparatively little to do with enhancing prices, iron excepted. Speculation has been the chief cause, and has been carried on quite out of proportion to the amount of consumptive and shipping business. The result is that prices have been pushed up too fast, and beyond their proper position, and now comes the fear, which is the greatest evil of all, that they may be maintained too long to the injury of commerce. The great mistake practised on some previous occasions by capitalists of large means in hoarding stocks has been clearly demonstrated and invariably led to great depreciation in prices, and inflicting considerable sacrifices upon themselves. The natural objection and reluctance to face a little loss has frequently caused holders to retain their stocks instead of realising, but it is to be hoped that former bought experience will not be without its proper effect, and that there will not be a repetition of past follies of this kind. A hoarder of stock in a general way only makes a rod for his own back, and keeps together a market merely for the advantage of other sellers, and to the disadvantage and inconvenience of regular buyers. The action of dealers is a very different one to that of the outside speculator. As a rule, dealers are ready to turn with the markets and make a price according to circumstances; but the movements of speculators are capricious, and their intentions are scarcely ever known, and always difficult to be understood; consequently the markets are always in a state of uncertainty whenever there is a large amount of speculative business being transacted. An insight into the character of business lately can be gathered by the fact of there being no perceptible increase of trade in all circles in discount circles, and also the large number of applications to bankers for loans on produce. These sort of commitments are not infrequently attended with much danger to the markets, for upon any political or commercial event of a disastrous character occurring, a sudden and serious fall is not unlikely to take place; and as the statistical position of some metals still keeps very unsatisfactory, and as the higher prices bring about increased production, and a less *bona fide* demand, it is evident that until such a time as prices are reduced to their proper level there can be no soundness or safety in the markets.

COPPER.—By the statistics published on the 1st inst., it will be seen that the stock of Chili produce in Liverpool and Swansea during the month of November increased 1890 tons. The present actual stock being estimated at 30,490 tons, against 28,600 tons on the 31st of October. The deliveries were particularly small, amounting to 1293 tons; the last half of the month were 686 tons, but against the light deliveries and increased stock there is a light charter of only 900 tons to be added to the next return, and unless the charters for the current fortnight are heavy, there may be no very great variation in figures at the end of the year, but, on the other hand, should the next announcement of charters bring up the quantity to the average, stocks will probably show an increase, as the deliveries, the latter part of this month, are generally small, and there is nothing transpired as yet to swell up the deliveries very considerably for the first half of December. According to the Valparaiso price Chili bars are now at 637. 10s. cost and freight to Liverpool. Other foreign ores and Spanish precipitates are estimated at 1358 tons, against 660 tons at the end of October, or just about double the quantity. The stock of foreign copper, now in London and landing, is 5934 tons, against 5391 tons, or an increase of 563 tons; at the same time the quantity afloat shows a decrease of 654 tons. The total figures, including all kinds in England and Havre afloat and chartered, are 58,420 tons, against 55,658 tons on the 1st of November, or an increase of 2762 tons to be brought over from last month. These figures do not comprise the whole public stock of Chili produce, as there is some quantity of ingots lying at the railway depots at Birmingham, and we would respectfully suggest to the compilers of statistics, to whom the whole trade are greatly indebted for the very valuable information they have hitherto rendered, whether the returns would not be more complete if the Birmingham stock were included. The present statistics will doubtless be deemed unsatisfactory, for with the exception of those on the 1st of September last—viz., 59,169 tons, they are the next largest on record, but then the price of Chili bars was only 544. 5s., whereas on the 1st inst. it was quoted 667. 10s., or about 12s. per ton dearer. The result is that with an increased stock of 2762 tons, the price actually advanced 10s. per ton, an anomaly wholly unaccountable upon the principle of supply and demand (legitimate), but easily to be understood when the speculative element at work in the market is taken into account. The smallness of deliveries during November is the greatest proof of the limited character of *bona fide* business, and an evidence of consumers being much better provided against their requirements than was by many supposed to be the case. Consumers and shippers will probably remain quiet for a time, as there seems no great inducement to buy yet awhile. Holders and postpone realisation in the hope that trade will improve and give more time to the market; but this, of course, is speculative, and the immediate future does not appear to warrant such sanguine anticipations. What with the Christmas holidays and the usually dull state of trade in December, the prospect of forced sales to clear up accounts before the close of the year, and the burden of increased actual stock for which provision has to be made, there is but little chance at present of the market improving. The present statistical position of the market fully confirms the opinion we have all along expressed, that prices ought to have been reduced before, and not upheld and increased; and the longer holders continue to hold their own, interests are likely to be prejudiced, for although in due time an increased demand may set in, yet stocks will probably not diminish, and supplies are not unlikely to come forward more abundantly—possibly the supply and demand may about balance one another, but then no advantage will be gained, and upon the least full taking place, prices would necessarily decline.

IRON.—There is no alteration of any consequence in the state of this market, but prices are fairly steady. The home trade has improved, but the shipping business has not particularly increased, excepting shipments to America, which continue to be made in large quantities. The works appear to be quite equal to the demands made upon them, and with the additional furnaces which have been put into blast, there is no doubt that the production will fully meet all the demand. As regards pig iron the supply is already in excess of requirements, which is shown

by the increase in public stocks, amounting to 39,470 tons, making the present stock in Scotland to 391,878 tons, with warrants in circulation for 361,200 tons, and in Middlesbrough 32,950 tons, with warrants in circulation for 92,254 tons. With these figures the trade is enabled to form a correct estimate of the real position of the market. Some more sanguine than the rest may argue that, owing to the improved demand from America, home consumers and other buyers, the enhanced prices will doubtless be permanently maintained, but such opinions should be received with caution, as the statistics we have just referred to scarcely bear out such hopeful expectations. The Middlesbrough market is reported firm, and quotations are rather irregular. The price for No. 3 ranges about 4s. 3d. to 4s. 6d., and forge iron is still about 6d. to 1s. per ton dearer. The shipments last month compare unfavourably with those for October, being about 40,000 tons less, and those for last week are said to be less than for some time past. The deliveries to Scotland last year were not much more than half what they were during the corresponding period of 1878, and, as may be seen by the figures at foot, the deficiency for the year is something enormous. There is still a little speculation going on, and many holders are indifferent about realising. The manufactured trade is in a better position, and there is more enquiry for all classes of iron, and prices are rather stiffer. Plate makers are also busier, and ship plates are now quoted at 8d. and bars and angles at 7d. Puddled bars are procurable at about 4s. 10s. per ton. The trade at Leeds remains without change; nevertheless, as most of the forges have a good many orders in hand, it is thought that quotations will shortly still further rise. Many of the manufactured mills are well employed, and in some instances increased work is obtained. There is said to be a still further revival in the trade in North Staffordshire, and another slight rise in prices has occurred. Orders are booked which will keep the mills well employed throughout the winter, and fresh hands have been taken on. The wages dispute continues, and the men have succeeded in some instances in obtaining increased wages. The Sheffield trade keeps active, and the demand for shipment to America and other foreign markets is said to steadily increase. Prices are tending upward, and many home consumers have been buying freely in anticipation of higher quotations shortly taking place. Large orders have been given out for Hematite brands, which makes it difficult to place fresh contracts at ruling rates. Common iron is rising in value, and the advance which was noted some short time back in marked bars has been well maintained. Rail, tyre, and other railway material is in better request, and prices keep steady. There is no falling off in the state of trade at Birmingham, and the various mills are fairly active. Makers of finished iron are still receiving large orders, and stocks in this district are stated to be gradually decreasing. The constant disputes arising amongst the men forms rather an impediment to the execution of orders, but as many of the employed are resuming work, it is hoped that this difficulty may soon be overcome. There is hardly any change to be noted in the state of the trade in the Welsh districts. A few establishments have been receiving increased work, but prices show no alteration, though former rates are held with considerable firmness. Large clearances are still being effected to America, though it is thought that the demand from that country has been scarcely so good. Most of the mills keep very busy, and more are being prepared to re-start. There is a fair business carried through in bars, but pigs are in rather more limited request. During Monday, and the early part of Tuesday, an active business is reported on the warrant market at Glasgow, at prices ranging between 6s. 1d. and 6s. 1d., but afterwards the market gradually gave way, and 5s. 6d. was accepted, and the market then still further declined, and closes for mix numbers to day at 5s. 6d.

COPPER.
Tin, g.m.b., Clyde... 2 19 0 | — || " Scotch, all No. 1... | 3 0 0 | 3 2 6 |
" " 5 0 6 7 6	—	—
Bars, Welsh, f.o.b. Wales...	6 5 0	6 7 6
" in London...	6 12 6	6 15 0
" Stafford...	7 15 0	8 0 0
" in Tyne or Tees...	6 15 0	7 0 0
" Swedish, London...	9 10 0	—
Rods, Welsh, at works...	6 5 0	—
Sheets, Staff., in London...	9 0 0	9 5 0
Plates, ship, in London...	8 0 0	—
Hoops, Staff.,...	8 10 0	8 15 0
Nail rods, Staff., in Lon...	7 15 0	8 0 0
STEEL.	—	—
English, spring...	13 0 0	19 0 0
" cast...	30 40	—
Swedish, keg...	13 0 0	—
" fag. ham...	15 0 0	—
LEAD.	—	—
Alloys I., II., III., and IV...	£115 0 0	—
" VI. and VII...	130 0 0	—
" W.B. (nom.)...	110 0 0	—
BRASS.	—	—
Wire...	7½d.	—
Tubes...	9	—
Sheets...	8½	—8½d.
Yel. met. sheath. & sheets	8	—6½d.
TIN-PLATES.*	per box.	—
Charcoal, 1st quality...	1 8 0	(nom.)
" 2nd quality...	1 8 0	—
Oke, 1st quality...	1 4 0	1 5 0
" 2nd quality...	1 3 0	1 4 0
Black...	per ton	17 10 0
Canada, Staff., or Gla. {	12	0 0
at Liverpool...	—	—
Black Taggers, 450 of {	35	0 0
Sheet zinc...	25 0 0	—

SHIPPING.
For week ending Nov. 29, 1879. Tons 7,248
For week ending Nov. 23, 1878. 5,450

Increase..... 1,798
Total increase for 1879..... 155,085
Imports of Middlesbrough pig iron into Grangemouth:—
For week ending Nov. 30, 1878. 6,150
For week ending Nov. 29, 1879. 3,460

Decrease..... 2,690
Total decrease for 1879..... 32,704

FURNACES.
In blast Nov. 29, 1879..... 99
In blast Nov. 30, 1878..... 92

TIN.—The sudden rise which took place in this market last week after the Dutch sale was almost as rapidly lost as it was gained, and on last Wednesday business was transacted as low as 8s. 6d. for foreign, or 7s. per ton less than the highest quotation on the previous Thursday; but the market soon rallied again, and yesterday it still further recovered, and 90s. 5s. to 10s. was officially quoted, and to-day's price is 90s. 10s. to 91s. The statistics published for last month are rather less favourable than those issued at the end of October, the total stock having increased to 15,007 against 14,418 tons and 15,552 tons on the 30th of November, 1878, but the actual stock on the spot and landing has slightly diminished. The deliveries during last month were not much more than half what they were in October, being 1482 tons against 279 tons, and 1595 tons for the same period of last year. The shipments from Straits were 375 tons, and from Australia 1025 tons. The stock of Banco in trading company's hands and afloat is estimated at 1342 tons.

QUICKSILVER continues in steady demand at the unchanged price of 7s. 6s. The Board of Trade returns just issued show the following statistics:—

	1879	1878	1877
Imports ..	2,111,050 lbs.	2,875,837 lbs.	3,011,136 lbs.
Exports ..	2,760,230 ..	3,229,538 ..	2,283,935 ..
LEAD.—This metal has still further advanced in value, and a fair demand exists amongst home consumers, but shipments to China and other foreign markets keep very limited. English pigs are now quoted up to 18s. and sheet lead at about 17s. per ton higher.			
SPELTER.—The market for this metal remains steady, ordinary Silesian brands offering at 19s. 12s. 6d. to 16s. English hard continues in but slight request at previous quotations.			
STEEL remains without material change.			
TIN PLATES are in limited demand at the increased value.			

Messrs. FRY, JAMES, and Co.—COPPER.—This metal has been freely bought during the last fortnight, and prices strengthened for a time by about 2s. per ton, but some realisations in the last few days have caused them to recede again 15s. or 20s. a ton from the highest. The transactions have been considerable, and all descriptions have participated.—**IRON.**—This has become dearer, Scotch pig having been for some days ranging between 5s. 6d. and 6s. 6d., and many makers of manufactured have advanced from 5s. to 10s. a ton.—**TIN.**—The sale of Banco in Holland on the 27th ult. having realised about 98s. per ton caused prices here to rally rapidly, and business was done in fine foreign up to 95s., but some brisk selling having followed we have receded to 90s. 10s. or about 20s. below our last report.—**SPELTER.**—This is dearer by 5s. a ton, and in good demand.—**LEAD.**—This metal is in request, and has advanced about 10s. a ton.—**TIN-PLATES:** These are still generally dear, but coke are slightly easier to buy.

Messrs. FRENCH and SMITH—COPPER.—COPPER remained quiet during the first half of the past month, with small transactions in Chili bars at about 65s., but later the market became more animated, when it was known that there were extensive enquiries from America, and that a fair quantity had actually been closed. The charters from the West Coast were under the average, but unsatisfactory deliveries cause an unfavourable statistic. Total stocks and afloat show 58,420 tons, against 55,658 tons Nov. 1; 53,621 tons Dec. 1, 1879; 41,516 tons Dec. 1, 1878. We quote Chili bars 66s. 5s.; Wallaroo, 74s.; tough, 71s.; manufactured, 76s.; ore and regulus, 13s. 6d. to 14s. per unit.—**TIN.**—The very favourable statistic of this article

Spanish bonds, 85½ to 86½; ditto Seven per Cent., 20½ to 20; and shares at various prices from 7½ to 8½; Scottish Australian, 2, ex div., and Yorke Peninsula, ¾.

On the Provisional Stock Exchanges there has been scarcely so much business doing, but upon the whole prices are fairly maintained. At Manchester Andrew Knowles, 50, were done at 48, and yesterday Bolckow, Vaughans, 20, at 19½; Ebbw Vale at 11½; Parkgate Iron at 2½ dis., ex div.; and Tredegar, 25, at 21.

The South Indian Gold Mining Company, with a capital of 100,000£, in shares of 17. each, has been formed to purchase for 33,000 fully paid shares, and 17,000£ in cash, and work some valuable mining rights in the Wynaad district of the Madras Presidency, India. The properties, which are more than 1200 acres in extent, and comprise numerous valuable reefs of auriferous quartz, have been examined and favourably reported upon by Mr. C. J. Harvey, whose long experience as manager of the Clunes works of the Port Phillip Company, Australia, is sufficient to secure confidence in his opinion. The statements published in the Journal during the past 12 months can leave no doubt as to the value of the gold deposits in the district in which the company proposes to carry on its operations; and it is mentioned in the prospectus, which will be found in another column, that the very considerable interest excited in the minds of scientific men in respect of the gold deposits in the Wynaad, prompted the Government of India to institute an official enquiry into the subject. The very important and most reliable information collected under this enquiry confirms the fact of the existence in this district of abundant deposits of the precious metal. The whole district too is covered with traces of ancient workings, and these are of great extent on the properties taken over by the company. The quartz, which may be inferred from the existence of these ancient workings, to have proved unremunerative to the hand labourer—who could not have pulverised more than 12 to 14 lbs. a day—must assuredly yield large profits when treated by powerful machinery driven by water-power and directed by the skill of modern science. Manual labour for mining is cheap and abundant in the locality, wages being from 6d. to 1s. a day, the importance of which fact will be evident when the profits realised by quartz-crushing companies in Australia, where steam-power has to be employed and miners' wages are from 7s. to 9s. a day are taken into consideration. It is pointed out that the peculiar advantages of the properties acquired by this company are that they are within 30 miles of Ootacamund, the summer seat of the Madras Government, and under British rule and law. They are easily accessible, and in telegraphic communication with London; the form of the reefs makes them immediately available, so that neither time nor money need be sunk in unproductive works. There is ample water-power, and timber is plentiful, and that native labour is cheap and abundant. The board of directors is composed of gentlemen of influence and commercial experience, and likewise well acquainted with Indian affairs. The subscription list is to be closed on Dec. 22.

West Polgoon Tin Mining Company is in course of formation on the Cost-Book System, with 6000 shares of 17. each, to purchase for 2000£ cash and 1500 fully-paid shares, and develop a piece of almost virgin ground lying exactly to the south of and adjoining old Polgoon Mines, and having through its entire length the main trunk road of the district. The property, which is held for 21 years at 1-15th dues, is more fully referred to in an article—Tin Mining in St. Austell.

Devon Great Consols advanced to 7½, 7¾, having been the leading mine dealt in during the week, at a daily advance, the shares being scarce and with an upward tendency. The sampling of copper ore is reported at 888 tons for the month, and of better quality. The reports read and proceedings at the last half-yearly meeting of shareholders have given great satisfaction, and it appears that since then great progress has been made with the erection of rock-boring machinery, which is to open out reserves of ore ground at least three or four times as fast, and at much less cost than hitherto done by hand labour, and will be thus the means of enabling the company to considerably increase the monthly sales of ore.

South Wheal Frances, 11 to 11½, ex div.; it is stated that strenuous efforts are being made to depress these shares, notwithstanding the fact that the profits of the 16 weeks dealt with in the accounts presented at the meeting on Tuesday were 3964£, and that, although the dividend declared was 50 per cent. higher than at the preceding meeting, not much more than one-half of the undivided profits were distributed. There is an attempt being made to revive the fear of a renewal of the South Frances and West Bassett boundary dispute, which resulted in such lamentable litigation a few years since; but Capt. James is now 3 fms. from that boundary, and is unlikely to approach near enough to it to afford even a pretext for litigation, as it is stated there is abundance of rich ground, the working of which will leave handsome profits in other parts of the mine. Those who sacrifice their interest through the adverse but inaccurate statements now being propagated will not have hereafter to blame Capt. James for withholding facts from them. There is considered to be every probability that the present rate of dividend will be kept up, and that the surplus profits will suffice to provide for all the additional machinery and deadwork necessary to keep the property in a prosperous and profitable position. The report of the meeting will be found in another column.

Mid-Devon (6s. 8d. paid), ½ to ¾; by a typographical error these shares were quoted 2 to 2½ last week. The secretary writes: The shares were knocked down in price last July by an issue of 17,000 new shares at par, or 6s. 8d. each; since then but little has been done in them, and though do doubt the price will now soon go up, still at the present moment the 6s. 8d. paid shares are only ½ to ¾ each. There is nothing particular to report about the mine, the frost having given them much trouble, freezing up the leats and the water on the wheels.

Canada Gold, 1½ to 1¾; the return of gold produced received with the last advices from the mines shows for the first half of the month upwards of 72 ozs. This would leave a good profit on working, and must be considered very satisfactory in the inception of an undertaking of this nature.

Sentein, 2½ to 2½; it is stated that although considerably retarded in the erection of dressing-floors by the extraordinary long continued frosts of last winter the mine has since that time gradually and steadily increased its returns till it has reached an average weekly output of 30 tons of dressed galena, and from 40 to 50 tons of blonde. In all it has since June made marketable rather more than 500 tons of lead ore, and 800 tons of blonde. The ore in France has always been held in high estimation, being very free from foreign sulphides, and containing at the same time from 18 to 20 ozs. of silver per ton of ore. Owing to the fear of losing silver it is not dressed so high as some of our British ores; but an average of 73 per cent. of lead is considered sufficiently pure by English smelters.

Missouri Lead, 10 to 12; in a report to the directors, dated November 14, Capt. Champion states "That the heaviest timber and ironwork in connection with the Cornish pump is fast nearing completion, and will be ready to place in position during the ensuing ten days, and work generally has been pushed forward. Our present plan of development is as follows:—To drift on the lode running from Master shaft through to St. Clair Mine, which is the portion of the lode referred to in the cable of October 16, and of which I entertain the very favourable opinion I expressed in that dispatch. Then to drift on the lode from Master shaft to St. Clair shaft; also drive south on the lode when a depth of 11 fathoms is made. To put in the order of the St. Clair shaft, and run drifts north and south on the lode. I have reason to think that in cleaning out this shaft we shall find many points in the lode left by former workers that will pay us handsomely to take away. After the above work is well advanced we shall then carry on the developments on Bald Hill, and work from the shaft known as De Clue's shaft." Lead is 26½ per ton in St. Louis. The directors have this week sent over another remittance for working capital.

Richmond, 9½ to 9¾; the usual telegram from the mines at Eureka, Nevada is this week regarded as highly important and encouraging. The week's run was \$40,000, from 645 tons of ore. During the week the refinery produced doré bars to the value of \$40,000. The telegram adds: Struck ore in fourth level, under Tip Top; developed 40 ft. by 20 ft. The manager (Nov. 12) reports upon the progress made. The 600, west from south fissure, is in very favourable ground. The 600 south is also improving. The No. 11 chamber, above the 400, is opening out very well. They have opened on the width of the ore 30 ft., and the indications are that they will have a good body of ore in this place. No. 13 is looking very well, and No. 14 chamber has improved. The ore appears to widen out as they rise on it. At present it shows a width of 40 ft. The furnaces are in good working order, and doing very good work. The machinery, both in mine and smelting works, is working smoothly.

Ruby, 4½ to 5; the report from the mine, which appears in another column, is of the most satisfactory character, with every prospect of great discoveries within the next few weeks.

In Hydraulic or Gold Washing Companies' shares there has been comparatively little doing. Blue Tent, 2 to 2½; all the ditches and sluices have been put in repair in readiness for washing. The latest advices from the district give information of heavy snow.

In Lead Mine shares there has been a large amount of business, the steady and continued advance in the prices of both lead and lead ores confirming the opinion that the improvement is permanent, and not merely transitory, as a few months ago was feared. It appears that during the week considerable attention had been given to the shares, amongst others, of Leadhills, Roman Gravels, Vans, Great Holway, Tankerville, Mineral Corporation, Frongoch, Gwernymynydd, West Chiverton, West Holway, North Hendre, Great Laxey, Pen-yr-Orsedd, and the Pateleys; and as it is confidently believed that pig-lead will still further advance in value buyers preponderate over sellers. Van, 22 to 24; the 105 west continues to look well, and is of the same value as last reported. The 120 west is also presenting an improved appearance. Sampling this week 300 tons of lead ore and 150 tons blonde.

Leadhills are quoted at 4½ to 5½, and close in great demand, owing to a telegram from the mine stating a good discovery of lead ore in the 20, worth 6 tons of lead ore in forebay, and 9 tons of lead ore in the bottom of the level.

Tankerville, 6 to 6½. As will be seen by the manager's report in another column there appears to be an important discovery taking place in the bottom levels, which is likely to lead to important results. The monthly sales of 100 tons of lead ore this week leaves a good profit.

Gwernymynydd, 5½ to 5½; it is reported that the various points of operation continue to produce large quantities of ore. The raisings for the month are in excess of the cost, although the water has only been drained out of the mine hardly months.

Mineral Corporation, 12 to 13; the issue in Paris of the 2000 shares at 31. prem. is reported to be progressing favourably. The French Committee sitting in Paris is composed of professional and other gentlemen, whose names are a sufficient guarantee that all necessary practical knowledge will be brought to bear upon the undertaking. It appears that the frost has interfered with surface operations at the mines, but the underground works are going on satisfactorily. In the No. 3 adit the lode in the stopes is looking very well both for lead and blonde ores. At the No. 5 deep adit (Great D'Eresby) the ground is looking much more favourable for driving. During the week (five days drivage as on Saturday) the men were engaged in putting in the tram-road, &c., the adit has been advanced 1 fm. 3 ft. 6 in.

Frongoch, 3½ to 3¾; another sale of 100 tons of blonde has just been made at 41. 14s. 6d., or 5s. 6d. per ton higher than the previous sale, and a further 100 tons of blonde and 100 tons of lead are in course of preparation for sale during this month. The returns will thus be increased to 300 tons of mineral for the month, which is far in excess of what was calculated upon at the inception of the company. Sales of ore commenced in September, and the total returns for the current quarter ending at Christmas will be 400 tons of blonde and 350 tons of lead, of a total value of over 7000£, which it is stated will leave a very large profit. The mine is still looking well, and good progress making.

Grogwinion, 3½ to 3¾; the shares are a little held by holders who bought cheap. The mine is stated to be looking well. Caron, 1½ to 1¾; the shallow levels being in rather disordered ground orders have been given to sink the shaft deeper with all speed. Red Rock, 1½ to 1¾; nothing fresh to report from the mine. The annual meeting will be held next week. Wye Valley, ½ to ¾; it has been decided to wind-up and transfer the mine to a new company, which is to sink a new shaft at a cost of some 2000£, and which will require 12 months to complete, during which time profits are not expected to be made. West Wye Valley, ½ to 1; the latest reports from the mine state that the deep level is looking better, and yielding a good deal of copper, mixed with lead and blonde, which is considered a good indication. Crosswood, 1 to 1½; the shareholders at their annual meeting decided to have the remainder of their property reported upon by a competent mining expert prior to entering into negotiations for further sales of land.

Pateley Bridge, ¾ to 1; the 40 west, on Rake vein, is worth 4 tons per fathom. The 40 east is worth 2 tons per fathom. The 30 east, on Mine vein, is in a splendid lode 7 ft. wide, and looking well. On Fielding's vein the appearances are exceedingly encouraging.

The Cape Copper Mining Company have declared a dividend of 12s. 6d. per share, payable on the 24th inst.

The Pontgibaud Silver Lead Mining Company announce a balance dividend of 10s. 9d. per share.

The Agent-General for South Australia announces that the National Bank of Australasia will pay, on and after Jan. 1, the bonds and interest due on that date on the bonded debt of South Australia.

The Rio Tinto Company publish the numbers of 825 of their Seven per Cent. Bonds, drawn on the 1st inst., for payment on Jan. 1. They will be paid at par, either in Paris at the Credit Industriel or in London at the company's office. The numbers are also announced of 39,440£ of the same company's Five per Cent. Bonds that have been purchased and cancelled for the approaching half-year's sinking fund.

* * With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: On Coal Washing; Water-power for Mining Purposes, No. V. (G. Rickard); the Production of Metals; Flagstaff Silver Mining Company (N. M. Maxwell); Immense Increase of Revenue to Russia—Hyper-Rehabilitation of Financial Resources (W. J. Thompson); the Cape Copper Company; Eclipse Rock-Drill (J. Barkell); Rock-Boring Machinery (J. Darlington); Rock-Drills (J. Shaw, J. Trowden); Bwich United Mines; Manganese Mining; Copper and Lead Mining in Wales; the Red River, and Waste of Tin (C. Henwood); the Great Tin Discovery at Roche; Silver Mining in Cornwall; Cornish Mining—Present and Prospective (C. Baden); Cornish Mining—the Gwennap District and its Uwargon Ground (O. Baden); Lady Ashburton Silver Mining Company; South Darren Mining Company; South Wheal Frances; South Frances Mining Company (C. W. Seccombe); Registration of New Companies; Scotch Mining Share Market Weekly Report. Meetings of Public Companies; Tolima, Caron, Wye Valley, and West Wye Valley Mining Companies; General Mining Association; South Wheal Frances Mining Company. The Copper Trade; the Tin Trade; the Coal Trade, &c.

PHOENIX UNITED (Linkinhorne).—A great improvement is reported at the 50 in the western ground, the lode being 5 ft. wide, worth 30£. per fathom. There is also an improvement at the 130, where the lode is 12 ft. wide, worth 60£. per fathom.

SOUTH WHEAL CREBOR.—Now that the water has been got out of South Wheal Crebor operations will be pushed forward vigorously, and it is expected the east and west lode lying a few fathoms north of the present workings will be cut in a few weeks. This lode has proved very rich at the same depth in the adjoining sett. The engine-shaft is at once to be sunk 18 fathoms deeper, where according to the dialling the east and west engine lode intersects the caunter lode.

KILLIFRETH.—We understand that the forfeited shares account of this mine is now entirely closed. All the shares are disposed of, and the mine now again consists of 6000 shares held by the adventurers. It is expected that this will at once give a steadier appearance to the shares, which are still at mere nominal prices, in consequence of the dread of large quantities of shares hanging on the market. This is now no longer to be feared, and with 6000 shares all placed, future calls (if any) will necessarily be much lighter than when nearly one-half of the shares were relinquished or forfeited by disgruntled shareholders in the period of depression.

WHEAL UNY.—A special general meeting of adventurers was held at the offices of the company, on Friday, for the purpose of forfeiting all shares in arrear of call (Mr. R. McCallan in the chair). The circular convening the meeting was read. The secretary reported that there were 172 shares still in arrear of call, amounting to 189. 15s., for forfeiture for the non-payment thereof. The following resolution was then passed:—"That the 172 shares now in arrear of call made thereon, in accordance with the list now read, be and are hereby declared forfeited, and be carried to account of forfeited shares, pursuant to the Stannaries Act, 1869; and that the committee be and are hereby fully authorised and empowered to sell or otherwise dispose of the same in such manner and at such times, and upon such terms as they shall deem expedient for the interest of the shareholders." A vote of thanks to the Chairman terminated the proceedings.

LLANRWST.—This property is rapidly bearing out the opinions of those mining engineers who have from time to time inspected it, amongst them Messrs. J. Kendall, J. Lean, J. Burgen, R. Southey, and G. Barker. The latter again inspected Llanrwst on Nov. 22, and his report was published in last week's Journal. He not only confirms the opinion he expressed some two years since as to the value of the mine, but also that of all the other mining experts who visited it before him. He estimates the present reserves of ore in the mine at 48,000£. worth above the adit. According to this estimate (calculating the value of the surface plant, machinery, &c., which is perfect and extensive), the mine is worth about 60,000£, and at the present price of its shares is selling for 30,000£. The company will almost immediately resume sales of ore, and deeper developments will be prosecuted with every probability of adding considerably to the reserves of ore already discovered.

GLENROY.—The report from this mine is very encouraging. At the bottom level the south end is now the width of the level, with two good walls. The lode in the north end is getting harder, and the spar more kindly for ore. The agent is of opinion that there is a great improvement, compared with the upper levels, and that both ends will make ore when under the ore ground seen in the levels above. The company are well provided with funds, having about 5000£. unexpended capital. Operations have for some time past been restricted to sinking the shaft, and recently driving the bottom level, but when ore sales were made the prices obtained were very high. In 1877 the lead sold realised 17. 19s. per ton, and blonde 6. 14s. 6d.

MESSRS. JONES AND HOUSTON, 25, CROSBY HALL CHAMBERS, LONDON, E.C., STOCK AND SHARE DEALERS.

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AUSTRALIAN TIN PRIZE MEDAL, 1877.

THE UNDERSIGNED IS PREPARED TO EXECUTE ORDERS for the

"KANGAROO" and other GOOD BRANDS.

S. L. BENNSAN

Kangaroo Tin Works, Sydney, 21st May, 1879.

NOTICES TO CORRESPONDENTS.

Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

WHEAL KITTY (St. Agnes).—Can any correspondent of the Journal inform me what is doing at this mine, as we see no reports as formerly in the *Mining Journal*? What has become of the new piece of ground to the west which was to be added to the present set; and when is the next meeting likely to be held, as a considerable time has elapsed since the last general meeting?—A SHAREHOLDER.

Received.—Dr. E. Beyer (Austria): Next week—"S. L."—"C. W. S."—"Old Style"—"Shareholder (South Dartell)"—"H. M."—"J. R." (Phosphorus as a Fertiliser)—Willard and Smith (Chicago).—"M. B. G.": Too late for the ships—"W. N."—"A. R."—"Quite Distinct": In no way connected—"G. G. H." (Liverpool)—"An Old Correspondent on Technical Education": The article is too large for us to publish—"Amanuensis"—"Shareholder" (Van Consols): See an advertisement in this week's *Journal*.

IMPORTANT NOTICE—FOREIGN POSTAGE ON THE "MINING JOURNAL".—Under the Universal Postal Convention the postage of the *Mining Journal* to many countries has been greatly reduced as compared with former rates. Henceforth the subscription will be 12, 10s. 4d. per annum (39 frs.), postage included for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxembourg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Serbia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 12, 19s. (50 frs.) Subscribers remitting to the office can in most cases avail themselves of the International Postal Money Order system; those in the United States and Germany should advise their remittance by letter, as the Post Office does not give the sender's name.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the *Journal* is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every *Journal* is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, DECEMBER 6, 1879

THE ROYAL SCHOOL OF MINES.

The unblushing jobbery and regretable incompetency of the Science and Art Department have been constantly exposed, not only in the *Mining Journal* and the Times but by all who have been unfortunate enough to come under its control, without at the same time sacrificing all ideas of duty to the public and all self-respect, so as, by becoming creatures of the executive, to secure the emoluments, too freely bestowed as the price of silence; and the Royal School of Mines has certainly been one of the greatest sufferers from the caprice complained of. It is at present unnecessary to discuss the worthlessness, regarded from a practical point of view, of the instruction obtained by the so-called Science and Art Students, owing to the vicious system, perhaps necessarily, followed in the examinations, encouraging and rewarding that system of cramming and deception which gives to the student the temporary power to satisfy examiners, without supplying him with any sound knowledge which he can apply in his efforts to earn a livelihood after he has finished his student's course; but it is absolutely essential that something should be promptly done to prevent the further disintegration of the Royal School of Mines, which is really the only practical technical school which we have in this country—the only school in which those who are to have the conduct hereafter of an important—indeed, the most important—branch of our national industry can obtain that information which may assist us to hold our own against the almost innumerable foreign rivals which are springing up around us.

It has been acknowledged that many of our trade difficulties are traceable to the inferior technical and scientific instruction within the reach of the British operative as compared with the workmen of the Continent; yet the Science and Art Department, merely, it may be hoped, through the incompetency of the executive, are seeking to neutralise, if not altogether destroy, the usefulness of the Royal School of Mines. It is only necessary to look down the list of Associates of that Institution to see that it embraces the names of a large number of those who are now the most prominent of the party of progress in our metallurgical works. So far from any step which might diminish the usefulness of the Royal School of Mines being desirable it would certainly seem to be more reasonable that the kind of science and art knowledge most encouraged by the Department should be ignored altogether, and that the moneys now uselessly expended should be applied to the support or assistance of trade schools, which should be available to the students who have completed their School Board education or its equivalent, and which should offer them an opportunity of learning the application of science to the particular branch of industry with which they are connected; in fact, the same advantages should be given to other industries which the Royal School of Mines offers to those connected with mining and metallurgy.

These remarks are suggested by the issue of a "Letter from Dr. Percy to the Chancellor of the Exchequer and Correspondence relating to the Proposed Removal of the Metallurgical Department of the Royal School of Mines from the Museum of Practical Geology, Jermyn-street, to South Kensington," which cannot be too generally read. It appears from this letter that the Science and Art Department have in this as in previous cases used a slight amount of cunning and some misrepresentation with a view to carry out their designs. In the first place their decision "to transfer at Christmas next the metallurgical instruction of the Royal School of Mines from the Museum of Practical Geology in Jermyn-street to the Science Schools under the control of that department at South Kensington" was not made known until after the prorogation of Parliament, which looks much like an effort to stifle if possible parliamentary enquiry, which would have prevented the job being completed. But this is not all, the Department assign as a reason for their decision something which Dr. PERCY shows by documentary evidence is not true. The reason assigned for the decision was that possession of the existing metallurgical laboratory in a house adjoining the Museum would be required by a building company to which the Office of Woods has granted a lease of the site on which the laboratory is situated, and a representation to that effect was made to the Treasury by the Science and Art Department. Now, to the uninitiated it certainly appears extraordinary that one branch of the Government should lease to private individuals property occupied by another Government institution, and the fact that it was *only* the Royal School of Mines inconveniences should not suffice to silence the stupidity any more than if the site of the new Law Courts had been similarly leased away. The circumstance that the removal of a laboratory would not involve such an outlay as would necessitate a parliamentary vote is but accidental. The principle is undoubtedly wrong, and the circumstances which led to its adoption should be thoroughly investigated, for it might be found at some future time that important Government offices had been leased to private individuals, necessitating the obtaining of costly accommodation elsewhere.

But even assuming that the leasing of the site of a Government laboratory to a private "building company" was *bona fide*, Dr. PERCY gives the letter of the company's architect, proving that either the present laboratory or one of twice the present superficial area could remain at the disposal of the Royal School of Mines. There is something so mysterious in the proceedings of what has been not inaptly called the "South Kensington clique," that a thorough investigation would appear to be absolutely necessary, and it is not doubted that many facts would be brought to light which would startle the public, and it might have the further beneficial effect of taking the direction of our science instruction out of the hands of

what eight years ago Dr. PERCY himself described as "a compact little 'caucus' of philosophers desirous of persuading the Chancellor of the Exchequer to assist them in what is termed 'the promotion of science,' but which is really the prostitution of science for the promotion of their own personal interests and idiosyncrasies."

AN UNFORTUNATE COMPANY.

We have headed this article "An Unfortunate Company," but surely the company with which we are about to deal is one of the most unfortunate undertakings in existence; we refer to the Nant-y-Glo and Blaina Ironworks Company (Limited). In the year ending August 31, 1876, this ill-starred concern lost 63,219*l.*, and in the year ending August 31, 1877, there was a further loss of 45,276*l.* In announcing this most disappointing result the directors observed—"A substantial part of the present year's loss is due to the manufacture of iron. The ironworks have been stopped for several months, so that the leakage on this account will not again be seen." Nevertheless, in the year ending August 31, 1878, the company sustained a loss of 26,827*l.* This loss, the directors explained, was "consequent upon the settlement of disputed royalties and way-leaves, repairs of mortgages, all of which are now stopped, thereby relieving the company from further loss." But this loss of 26,827*l.* was not all the discouragement which the shareholders had to face for 1877-78, as the accounts for that year comprised an adverse item of 120,000*l.* for "estimated loss on realisation and depreciation" of railways, tramways, wagons, trams, loose tools, utensils, and stocks." At the close of August, 1878, the directors accordingly returned the loss of capital sustained by the company to that date at no less than 268,613*l.* However, the directors in the same breath assured the proprietors that "the company was relieved from further loss," and with this scrap of comfort the luckless shareholders were fain to pass the accounts. Another twelve months have slipped away, and on Tuesday the directors will meet their constituents at Manchester, and will present them with a balance-sheet showing a further loss of 6346*l.*, in addition to 7023*l.* paid and agreed to be paid for dilapidations. So far from the losses having been arrested, they have thus been increased from 268,613*l.* August 31, 1878, to 281,982*l.* August 31, 1879. The directors now remark that "the time has come when losses may be said to have ended, and moderate profits are in view." But their promises have been so often disappointing that we prefer to wait another twelve months before we attach much practical value to them. The history of the Nant-y-Glo and Blaina Company for the past six years has indeed been a history of depreciation, dilapidation, and disappointment. The word "dividend" has no place in the Nant-y-Glo and Blaina vocabulary.

The company has not only abandoned the manufacture of iron, it has also discontinued the extraction of coal. All the income which it now collects it derives from royalties, way-leaves, and rents. The open collieries have been sub-let, and the directors have also succeeded in sub-letting 720 acres of the outlying properties of the company upon which no pits have been sunk. These outlying properties, the directors observe, with a vague flourish, have been let to "two great firms," and they add that only about 300 acres of the company's maiden property remains untenanted. But even these sub-letting operations have been attended with smaller profits thus far that the directors led the shareholders to expect would be realised for them. In the year ending Aug. 31, 1877, the net income from royalties, way-leaves, and rents was 17,233*l.*; in the year ending Aug. 31, 1878, 19,989*l.*; and in the year ending Aug. 31, 1879, 15,382*l.* Thus, even this poor crutch upon which the directors have been relying has thus far failed to be of much service to them. However, hope springs eternal in the human breast, and we find the directors talking about the transfer of the company's railways to the London and North-Western Railway Company upon "advantageous terms," and also upon the letting at fair rentals of the Blaina blast-furnaces and the site of the Old Blaina Mills. It is proposed to entirely demolish the old blast-furnaces and ironworks at Nant-y-Glo so as to save repairs. So much for the Nant-y-Glo and Blaina Ironworks Company (Limited).

THE TELEPHONE IN MINES.—It appears that the articulating telephone is now being adopted at some of our mines, and there is no reason why it should not be most successful, seeing that by it anything that may happen at the bottom may be at once made known to those on the surface. With such an advantage over ordinary signalling there is no ground why the telephone should not come into general use, more especially when its simplicity is taken into consideration. A small bar magnet plays an important part in the transmission of the sound. At the end of it is a coil of thin insulated wire, and when a piece of iron approaches the end of the bar current of magneto-electricity is caused to flow along the wire of the coil, and this process is repeated in drawing away the piece of iron. The operation takes place when the two ends of the coil of wire are connected together. If the coils of two magnetic bars are connected by wires of any length then the current induced in No. 1 will pass through the coil of No. 2—so that the latter bar becomes more active in its magnetic quality, drawing to itself any piece of iron within its field of attraction; therefore, if a number of electrical vibrations were set up in No. 1 telephone by the vibrations of the iron placed at right angles to the magnetic axis, which consists of a thin iron plate .007 of an inch in thickness, and 2*l*. in diameter, which forms the sounding-plate or diaphragm, there would result as many electrical pulsations to travel along the wires per second as the diaphragm vibrates in the same space of time. The electrical waves reach telephone No. 2, and through its coil changing the condition of the magnetic bar from a passive into an active one, thereby attracting and repelling its sounding plate synchronously with No. 1. The result is the emission of the same sound as that which caused the sound waves in No. 1. Such is a brief description of the articulating telephone, so that it will be seen that the system is a very simple one. It is stated that the minimum number of sound waves to which the human tympanum is sensitive is 14 per second, the maximum about 36,000 per second. The sound waves set up by the cricket on the hearth vary between 20,000 and 30,000 per second. The sound waves are converted by the telephone into electrical waves, which, passing along the wires alluded to, are reconverted in the receiving instrument into sound waves. These sounds, or repeating voices it may be said, can be conveyed a great distance, and the recent improvements that have taken place with respect to its adaptation for mining purposes leaves nothing to be desired.

MINES REGULATION ACT.—PAUPER CERTIFIED MANAGERS.—An important question was raised in the Queen's Bench Division of the High Court of Justice—whether the certified manager of a mine, merely paid a small weekly salary, can be prosecuted for not effecting due ventilation of the mine when no means are provided by his employer for doing the necessary work, which might cost hundreds of pounds. Mr. Hall, H. M. Inspector of Mines, laid an information against Mr. Hopwood, the manager of the Alyn Mine Bank Colliery, who, although no doubt a competent man, was a mere servant, receiving 1*l.* per week salary. It appeared that an assistant-inspector, in 1878, noticed that the lamps hung in the main coal seam of the mine burnt dimly, owing to the presence of "black-damp," and found the ventilation bad through want of a proper system of ventilation; that the defect in the ventilation could be obviated by certain means, which, in his opinion, would involve an outlay of 200*l.*; and that though the manager might have improved the ventilation with the resources at his disposal, yet that he only had a salary of 1*l.* a week, and that there was a resident director of the mine, acting in its daily management, whom he had informed of the necessity for a better system of ventilation. No evidence was given for the defence. And on these facts it was submitted that the complaint should have been against the managing director and not against the defendant—a mere servant; and the magistrates considered, they said, that the defendant with a salary of 1*l.* a week ought not to be held liable for not having the mine properly ventilated at an outlay of 200*l.*, and that as he had complained to the managing director the complaint

should have been against him; and so they dismissed the complaint, on which the Inspector appealed against their decision. The words of the Act are that every person who does not comply with any of the rules shall be guilty of an offence, and in the event of the non-compliance by any person being proved, the owner, agent, and manager shall each be guilty of an offence against the Act unless he prove that he had taken all the means in his power to enforce the observance of the rule. The magistrates would not convict Hopwood, as they considered the managing director to be really the guilty man. But the Government Inspector had virtually no remedy against anyone but the manager, and therefore appealed, Hopwood not having proved before the magistrates that he had done what he could. The Lord Chief-Justice enquired—What power had the manager, without funds for the purpose, of enforcing the rule? It would, it appears, require 200*l.* to do it in this case. When it requires structural alterations at a great expense is the manager, at a small salary, to be called upon to incur the expense? He told the owner what was necessary, and was not that all he could do under the circumstances? Mr. Marshall, for the defendant, urged that the statement that he "might have improved the ventilation" with the means at his disposal was very vague, and did not show that he could have done what was required to be done, and which would have cost 200*l.*; and, in effect, the magistrates had found that he had done all he could, and that as he complained to the managing director he had done all he could. Upon this the Lord Chief-Justice remarked that the magistrates had exonerated him altogether, although it appears he had not done what he could with the resources at his disposal. No doubt it is a vexatious proceeding to harass the manager when the owner might have been proceeded against, who is the party really liable. The manager could not be fairly called upon to do all that was necessary, but still he ought to have done all he could with the means at his disposal. He could not apply perfect remedy, but he might have reduced the evil. Mr. Justice Manisty added that Hopwood could not produce perfect or adequate ventilation, but he could have improved the ventilation. In the result the Court decided that it was not necessary in order to exonerate him that he should show that he had expended money in structural alterations, it was enough that he should point out to the owner the necessity for such alterations, and this he had done; but he had not done what he could with the means at his disposal to remedy or mitigate the evil, and he was bound to do his best. The case, therefore, was remitted with this opinion—that the magistrate might convict of some offence.

THE MINES REGULATION ACT.—A fine of 5*l.*, under the Mine Regulation Act, was inflicted at the West Bromwich Police Court upon Jacob Chilton, proprietor of the Jervoise Colliery, for not producing to the Inspector of Mines a plan of the workings of the colliery when requested to do so. The summons had been issued by instructions from the Home Secretary.

FRENCH INVENTORS, AND THE ENGLISH PATENT LAWS.—The interchange of industrial inventions between France and England is now so considerable that it is essential that the inventors in France should be thoroughly acquainted with the laws which England offers for the protection of invention. Fully appreciating this Mr. Emile Barrault, ingénieur civil diplômé, of Paris, has just published, under the title of "Les Inventeurs et Les Lois pour les Patentés d'Invention dans la Grande-Bretagne," which contains an elegant translation of the various British laws affecting patent rights, with concise commentaries and references to some of the leading law cases which have been decided by the English Courts in connection with patents. In the 34 pages of introduction Mr. Barrault supplies such a complete insight into the English Patent Laws as will readily enable the French inventor to comprehend his position, whilst the remainder of the volume gives the laws in details, and various other matters of interest to the reader. The book displays a sound knowledge of the subject, and will prove of great value both to inventors and manufacturers.

WASHING AND SCREENING COAL, SCRAP-IRON, &c.—The invention of Messrs. BROWN and BENNETT, of Middlesborough, consists, firstly, of improvements in washing ashes and other material by passing them through a revolving screen, made circular at the ends and square in the middle, or it may be made throughout either circular or square, and about a portion of its length in the centre; they effect the washing by having the tube or screen of a larger diameter than the ends, this larger part projecting into a tank of water, and in order to pass the ashes or other material through, and to raise them out of the larger diameter up into the smaller part of the tube, and to deliver the said ashes or other material out at the end of the screen or tube, they purpose using a worm or screw on the last end of the tube or screen; different sized meshes may be placed so as to separate the small from the large if required. Lastly, what they claim as their invention is a tube or screen varying in diameter to enable a portion of it to revolve in the water with the ashes or other material, the same to be carried through the tube or screen by means of a worm or screw.

TIN MINING IN ST. AUSTELL.

The highly prosperous position of the Tin Market has not only caused a largely increased demand for shares in tin mines, but has led to the re-opening of many mines which, although capable of returning good profits in ordinary times, have succumbed during the late long period of depression, and even the continuations of the proved lodes have been neglected. An instance of the latter has been afforded in the case of the Great Polgoon and Great Hewas lodes, for it appears that an almost virgin piece of ground, which is now to be worked by the WESL POLGOON TIN MINING COMPANY, at present in course of formation on the Cost-Book System, with 6000 shares of 1*l.* each, lies exactly to the south of and adjoining the old Polgoon mines, and that through the entire length of this undeveloped property the main trunk lodes of the district run. The old Polgoon raised over 3,000,000*l.* worth of tin, and paid 1,000,000*l.* in dividends, while Wheal Hewas raised an enormous quantity of tin and nickel, and paid hundreds of thousands of pounds profit to the adventurers. The geological conditions are all that could possibly be desired. The killas through which the lodes pass is of the same congenial character that proved so productive in the parallel lodes adjoining. A large elvan course passes to the south, through the whole length of the sett, and intersected by three caunter lodes of great promise.

From the prospectus, which appears in another column, it will be seen that the proceeds of the first call will erect all the necessary machinery, and carry on the mine for twelve months, after which it is confidently believed the amount, to be raised by calls not exceeding 2*s.* 6*d.* per share, at intervals of not less than three months, will open a lasting and profitable mine. There will be no other call than the first required until the machinery is erected; and that the company is started for the purpose of legitimate mining the vendors only taking 1000*l.* in cash and 1500 fully paid shares. Special attention is called to the feature in the financial management which provides for a monthly audit by a public accountant, to whom the books of the mine will be at all times open. The lease is for 21 years, at 1-15*th* dues. Favourable reports upon the property have been made by Mr. T. J. Bewick, M.E., and by Captains Francis Thomas, James Tredinnick, John Edwards, and Matthew Wasley. Captain Thomas Wasley will have the management of the mine.

The SENTINEL MINE, in the Pyrenees, to which we drew attention some time since, appears to be rapidly fulfilling the expectations formed of it, based on Mr. John Lean's report on it. Although considerably retarded in the erection of dressing-floors by the extraordinary long continued frosts of last winter—and, therefore, unable to commence preparing ore for market till the end of June—it has since that time gradually and steadily increased its returns till it has reached an average weekly output of 30 tons of dressed galena, and from 40 to 50 tons of blonde. In all it has since June made marketable rather more than 500 tons of lead ore, and 800 tons of blonde; and, with the exception of two parcels sold privately, the buyers of the first parcel of galena (Messrs. Quirk, Barton, and Co., of Liverpool) have persistently bid the highest prices for all subsequent

parcels tendered. The ore in France has always been held in high estimation, being very free from foreign sulphides, and containing at the same time from 18 to 20 ozs. of silver per ton of ore. Owing to the fear of losing silver it is not dressed so high as some of our British ores; but an average of 73 per cent. of lead is considered sufficiently pure by English smelters.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Dec. 4.—Finished iron, whether the product of first or second class houses, is increasingly difficult to secure at such prices as buyers care to close with. At the meetings of the trade yesterday and to-day 9*l.* was the minimum price for sheets (singles), though sales at this figure were very limited: 9*l.* 10*s.* was offered if delivery was promised in February; but makers were deaf to such business, as also to offers of 12*l.* 10*s.* for lots with delivery extending over the same period. The advance in speeler and tin has caused another 20*s.* rise in galvanised sheets. Delivered in London the chief Wolverhampton houses now quote for 24 W.G. from 18*l.* to 18*l.* 10*s.* per ton. The rise was the result of independent action by all the firms affected. Raw iron is being bought heavily wherever makers will accept contracts, and the make is increasing. Stocks lately in producers' hands are cleared out in some cases, but in others there are still large stores, as makers prefer to hold them, anticipating still better prices. Upon the week these are up all round. In brands imported into South Staffordshire the advance is particularly noticeable. Tredegar (South Wales) pigs are 87*s.* 6*d.*—a rise upon the week of 7*s.* 6*d.*; Glendon (Northampton) pigs are 67*s.* 6*d.* and 70*s.* respectively—a rise of 2*s.* 6*d.*; and Thorncleiff (Yorkshire) are 70*s.*—a rise on the fortnight of 5*s.*

The advance of 1*s.* per ton in coal and of 6*d.* in slack and screenings has not checked the demand. All the collieries are fully on, and numerous additions are being made to the working staff. In one case an owner is credited with having set on 100 fresh hands. In the Cannock Chase district domestic fuel is being mined with all available dispatch, and the South of England is one of the best markets. Special coal trains are being dispatched to that quarter daily, some of them needing two engines. The Earl of Dudley's new prices for Thick coal east of Dudley are:—Furnace or large, 10*s.*; lumps, 9*s.*; steam, 8*s.*; screenings, bright, 7*s.* 6*d.*; ditto, steam, 7*s.*; engine slack, best, 4*s.* 6*d.* Heathen coal in the same locality is:—Lumps, 9*s.*; screenings, bright, 7*s.* 6*d.*; and slack, 4*s.* These new rates causing an advance in Thick coal colliers' wages of 3*d.* per day or "stint," and in Thin coal seams of 1*d.*

The meeting of blast-furnace proprietors, held at Birmingham this afternoon, was an influential one, and was presided over by Mr. J. P. Hunt, Chairman of the trade board. It was unanimously decided to advance the wages of furnace men 10 per cent., the advance to commence from Saturday next.

REPORT FROM CORNWALL.

Dec. 4.—We are now inclined to hold that we shall see no further advance in the tin standards until after Christmas. Our anticipations of last week that an advance was not far off, and that if it did come this year it would come speedily, were amply realised on the day after we had penned those lines, by the rise of 4*s.*, declared as an immediate consequence of the Banca sale, and which, indeed, might have been made before if the smelters had not been so very anxious to keep up the extra margin to which Capt. Teague and others referred at the recent meeting of the Mining Institute. However, we are disposed to regard this extra caution on the part of the smelting interest as having done no particular harm, but on the contrary as having contributed materially to the steadiness and certainty of the progress of the revival. If the smelters had displayed many instances of such irresolution as they showed in the now historic and happily ineffective drop of 3*s.*, a blunder which was recalled almost as soon as it was made, we should be far from being in as satisfactory a position as we now are, even though the standards might rule much higher than they now do. The chief essentials at the present time are steadiness and confidence, and nothing could injure mining in its reviving condition more than anything which would tend to shake either.

But while we say this, and while we regard the action of the smelters as having been conducive to the best interests, at this juncture of mining in the county (and not only of tin mining, but of copper mining also in its degree, far apart from the question of the prices of produce, the two act and react upon each other) there seems to be no adequate reason why, when changes are being made in every other department of mining enterprise, we should be content to go on with the old system of sale. If there was as much variation in the yield of black tin as there is in the produce of our copper ores, of course we should have to fall back upon a system of ticketing, or something of that sort. It is simply because within certain tolerably well defined limits the produce of black tin is so fairly constant that the present system of standards is possible. We are sometimes told that the interests of the smelter and of the miner are identical. This is true in a certain sense. It is equally true in a certain sense that the interests of landlord and tenant are identical. The smelter as well as the miner is interested in the progress and prosperity of mining. The landlord as well as the farmer is interested in the prosperity and progress of agriculture. So far their interests are identical. When, however, it comes to a question of the division of the profits their interests diverge. The smelter wants to buy as cheap, and the miner to sell as dear, as possible. The landlord wants to get as much rent and the tenant to pay as little as possible. Copper smelting is a complicated process, and we can very well understand that it would not pay any of the existing copper mines to take it up.

Tin smelting is quite a different thing. In the process of dressing, and the consequent production of black tin, the "manufacture"—for such it really is—is carried on up to the very last point through complications vastly more difficult than the reduction of the black ore into white metal. Why should not some of our mines at any rate complete the process, and add to their profits that on the returning? There really is no more adequate reply to this question than that our miners said: do it, because they do not—an answer which is neither conclusive nor creditable. There was a time when all our mines did smelt their own tin. Again that was succeeded by a time when they took their ore stuff to smelting houses, and received back in metal a certain proportion, calculated on the quantity of black tin brought. It is comparatively a recent innovation under which the smelters became metal merchants and brokers, and there is no adequate reason in the nature of things why from our large mines at any rate it should continue a moment longer than the adventurers choose. A good deal is said sometimes about the need of mixing different qualities of tin ore in the process of smelting. We believe this necessity to be greatly exaggerated, and at any rate, so far as it does exist, it could very well be met by such managers as Captain Teague and Captain Josiah Thomas, and several others whom we need not name, whose interests and operations are far from being confined to one concern. A far more weighty objection would have been the fact that at times it is necessary to hold stocks in hand, and wait the time of the market. This would have been a difficulty a few years since; but how can it be regarded as one now, when our mines have learnt to stock their black tin? If tin ore can be stocked, why not metal? and will anyone pretend to say that our mine managers are not quite as capable of selling one as the other? This question ought now to be pretty well ripe for solution, and there is no reason whatever why the discussion initiated at the Mining Institute should be allowed to stop where it began.

How far it would be possible for the leading mine managers as a body to endeavour to settle the price of tin, as suggested by Captain Abraham James, it is difficult to say. We are doubtful of any such arrangement being of long continuance, though it may be worth the trial. There is no reason at all, but quite the reverse, why the buyers only of any article should fix the price, and the sellers have nothing to say about it. For ourselves, we are much more hopeful of any practical attempt to qualify the present system being made by home smelting, so often talked about, but still in the future. One difficulty

in the way is that the smelters are so largely interested as adventurers, but this applies to either proposal equally, and it is quite within the power of several mines at once to smelt for themselves, while there may be unforeseen difficulties in the way of a sellers combination. The larger the area sought to be included the greater the difficulty. The whole question is one to be thoroughly threshed out.

The work of the Explosives Committee, commenced this week, according to announcement, at Serivik Quay, Chacewater, when a number of trials were made with various explosives, in the presence of many gentlemen who are specially interested in this investigation. It seems, however, unadvisable to anticipate the work of the committee by expressing any opinion upon the results. The enquiry is as yet in its first infancy, and it would be injudicious and unfair to pronounce any views upon a matter *sub judice*, so to speak. One thing is certain, the enquiry has every prospect of being thorough.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Dec. 4.—Referring to my remarks of last week on the Nantlle Valley drainage scheme I would add that at a preliminary meeting of the quarry owners of the Valley, held at the Royal Hotel, Carnarvon, on Nov. 21, the engineers, Messrs. Le Fevre and Henderson, explained the scheme, and a local committee was formed for the furtherance of the undertaking, with Dr. Evan Roberts, of Penygroes, as chairman, and Mr. G. J. Gray was appointed secretary to the committee. The plans of the Vyrnwy water scheme for Liverpool were deposited with the clerks of the respective parishes last Saturday, and all the other requirements of the law were fulfilled. The work necessary to do this has been very great, and Messrs. Hawksley and Deacon, the Liverpool engineers, with their staff of assistants, have worked night and day of late in order to accomplish the work. The authorities of Welsh towns seem to be getting thoroughly aroused to the need there is for a plentiful supply of pure water and more efficient sanitary arrangements. Several large schemes requiring parliamentary sanction are before the public, one of which relates to the town of Portmadoc, while numerous other schemes are arranged by the mutual consent of the parties interested. It is a matter for congratulation that all these water schemes are on the principle of gravitation, the efforts being directed to the obtaining of pure water from regions above the possibility of defilement from human habitations. Thus, while the people of London and other great towns of the kingdom, are content to go on drinking the diluted sewage of towns higher up the rivers, whence their water supply is drawn, the remote and often ridiculous Welsh people are applying the true principles of water supply to the towns of their own country.

Mr. J. R. Bishop, late manager of the Elwyn Valley Slate Quarry, Carmarthenshire, was presented with a silver teapot, at the Yelverton Arms Hotel, Whitland, a week or two back. The present was subscribed for by the workmen employed at the above-named quarry, and also at those of the Cleddau Valley and Pencely, of all three of which Mr. Bishop's father, Mr. Wm. Bishop, of Rose Hill, is director. The presentation was gracefully made by Miss Anne Harries, of Vron Canol. Mr. Bishop, sen., is the pioneer of slate quarrying enterprise in that part of South Wales, and it must be a source of satisfaction to him that each quarry is opening out well. The Slate Trade of North Wales maintains its improvement, and we hear less of American or other competition than we did during the worst stage of the recent depression. The Welsh Slate Company are taking steps to remove the hindrances created by the late fall of rock in their quarry. If there were a quarry engineers' club I would suggest as a good subject for discussion, "Are frequent falls of rock compatible with good quarrying?" Mr. John Francis, who for many years was manager of the Penrhyn Slate Quarries, but who latterly has practised as consulting engineer at Portmadoc, died suddenly last week, and was buried with many marks of esteem from the inhabitants of the town.

The ironworks of the Wrexham district are much busier than they were, and there is a consequent stiffening in the prices of coal. The brick trade of the Ruabon neighbourhood is fairly good, but prices are low. Good ordinary bricks are delivered at stations ten miles from the works for 2*s.* per 1000. Five years ago the price for the same was 3*s.* per 1000. A fatal accident occurred at the Bettisfield Colliery, Bagillt, last Saturday. Joseph Edwards was killed by a fall of rock, a fellow-workman narrowly escaping. At Prestons Pit, Ketley, on the previous Wednesday, John Bowles was killed from the same cause whilst fixing timber.

The funeral of the late Mr. Williams, of the Van Mine, was a representative one, the mining religions and social interests with which Mr. Williams was identified being all represented. Mr. Williams was a good, able, and useful man, and his loss will be much felt in the district.

It is pleasant to read of the improved appearance in the deep level at Parrys Mountain, for by this time it must, one would think, be pushed forward under the open workings. Is this so?

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Dec. 4.—Mining operations in Derbyshire have been going on much as usual, although for some descriptions of work in connection with them the weather has been most unfavourable. At the lead mines, in some instances of late, there has been a little more done, but many of those who, during the year, have been working mines on their own account, have had a hard time of it; worse indeed than those who have been working for others. The increase in the price of lead, however, during the next year will in all probability see more mines in operation, for very many that have been opened out are now standing. Barytes are being extensively made at Matlock and some other places, and there is no doubt but what it pays, seeing that the raw material is so very cheap, whilst the paint itself realises a good price. Ironstone mining is only now carried on to a moderate extent, so that not one-half of the iron made in Derbyshire is from the ore raised in that county, for ironmasters appear to be able to buy it cheaper from a distance and pay the carriage than what they can raise it at home. At the present time the quality obtained at the places worked in the county is little more than 3500 tons a week, whilst the quantity consumed in the furnaces will be about 15,000 tons weekly. The principal quantity of the ore comes from Northamptonshire, but at one of the largest works a good deal of the Lincolnshire ore is used. Derbyshire pig has been in good request of late, and full rates have been obtained for it, so that those who held back and laid in stocks when prices were particularly low have done well. Should the trade keep up to its present proportions there is every probability that several furnaces will be put in blast in the early part of the year. In manufactured iron and steel rails business continues good, more particularly as relates to the latter. House coal, as might be expected, has been in increased request, owing to the severity of the weather, and the Midland Railway has had a very heavy tonnage pass over it to the southern and western parts of England. Still, there has been no material advance in price, so that the profits at this the best season of the year must be small. A large tonnage continues to be sent to the Metropolis, but even there the charge to the consumer is now only 1*s.* per ton more than it was during any part of summer. What may be termed the active season for steam coal has now passed away, and comparatively little is now being done in it. During the whole of the year the prices have been below the paying point, whilst the trade was not by any means so good as in former years.

In Sheffield trade goes on improving, orders being received almost daily for almost every description of goods, principally from America, the East Indies, and our colonies. The increase in the price of ordinary and hematite pig has led to a corresponding advance with respect to both manufactured iron and steel. Cast-steel sheets sell at from 19*l.* upwards, tool steel 14*l.* to 16*l.*, and best rolled steel for the finest of springs realises from 60*s.* to 70*s.* a ton. The composite armour-plates recently patented have been so far successful that considerable orders for them have already been received. Seeing that there will be so much less displacement where they are adopted instead of the much heavier iron plates they will after all turn out to be much more economical and at the same time have a much greater resisting power. Ordinary ship and boiler plates are being largely

produced, and there is also a steady business being done in tyres, axles, wheels, and other descriptions of railway rolling-stock. The Bessemer rail mills have been running well, and despite the rise which has taken place in them orders of some magnitude are being sent to the makers, so that there will be plenty to do in them for some months to come. Steel plates are also in better request, as they are now used for many purposes for which a short time since iron alone was used. The cutlery houses are better employed, and the same has been the case with respect to those connected with the file and edge tool trades.

In South Yorkshire the coal trade keeps up well, but the low prices at which all qualities have to be sold leave little or no profit to the colliery owners, while many of them say they are still losing money on the sales. House coal goes off briskly just now, and a larger quantity than usual has gone over the Great Northern to the Metropolis. The rate charged by that company, however, is a great bar to the extension of the trade, seeing that the charge made by the Midland from Derbyshire is considerably less. The workmen employed at the Swaithe and Edmund's Main and the Monk Bretton Colliery are still on strike, and great distress prevails, as the Association are unable to render any pecuniary assistance.

The question of selling coal direct from the colliery owner to the consumer is about to be taken up in earnest, and a meeting on the subject is about to be held in London. It may be said that the middlemen or merchants have been making good profits at a time when the coalowners were losing money, as many of them are now doing. To sell direct, however, would be advantageous alike to the consumer and producer, as the former would have his coal at a much less cost than at present, whilst the latter would have a part of the profit that now goes to the merchant.

TRADE OF THE TYNE AND WEAR.

Dec. 3.—The Steam Coal Trade has been pretty good during the week, most of the works having been well employed. In the Blyth district most of the works have been kept regularly going, a good supply of ships having arrived in the Tyne. At Tyne Dock the import and export trades have been very brisk also. The shipment of gas and other coal has been heavy, as also the imports of ore, timber, &c. On the Wear many of the large works have been stopped two or three days, the supply of ships not having been so good at Sunderland. The gas coal trade continues brisk, and also the coke trade—in this trade makers are well sold forward, and they are now extremely cautious in making quotations for contracts. The demand for house coal is improving, stimulated by the severe weather which has now set in. The price of coal generally is much too low, and barely remunerative, except in favourable and exceptional cases. Of course, a number of collieries have been re-opened since the revival took place, and this has prevented to some extent the advance of prices; but during the last two months a considerable advance has been made in most coals and in all cokes. The feeders of water men with at the Castle Eden Colliery have proved to be very heavy; but great efforts have been made to overcome them, and it is hoped that this will be achieved.

An important meeting of Northern coalowners was held in London on Saturday, to consider the price of house coal in the Metropolis. It was stated that the price of best coal in the Pool is about 16*s.* per ton, and the retail price about 2*s.*; and that this represents an excessive profit, added to which the coal sold ex ship is pure, and the coal retailed is usually mixed. It was resolved to hold another meeting, with the view of securing for producers and consumers a share of the present large difference between the price at which coal is brought to the Thames and the price at which it is delivered to the inhabitants of the Metropolis. This subject has often been commented upon in the Journal, and there can be no doubt that it demands the serious attention of the Northern colliery owners. Surely some method can be devised to bring the raisers of coal in the North and consumers in the Metropolis into a position more favourable for the interests of both parties, and thus prevent them from being so severely taxed for the benefit of these rings and middle men. It is stated that one of these rings nets 50,000*l.* per annum by the transactions. The appointment of agents for the sale of the coal would put an end to this injustice, and now that the owners have moved in the matter it is hoped that they will not let it rest until something important is accomplished.

Now that tramways are on the eve of being extended in all directions, not only in this locality, but in most others where the population is great and there is much commerce, the question of steam-engines for tramways assumes great importance. We noticed lately that an engine had been constructed by Black, Hawthorn, and Co., Gateshead, and patented by them. This engine was tried at the works in the presence of a large number of engineers and others, and so far it was highly approved of. Since that time some additions have been made to it, and no expense or trouble has been spared so as to comply with the regulations of the Board of Trade. The engine has been finely painted, and has a most attractive appearance; and at the same time there is nothing about it likely to attract the notice of horses. It resembles very much in appearance an ordinary tramcar. The members of the Northern Institute of Mining and Mechanical Engineers have arranged to inspect the engine on Saturday, and it is expected that a public trial of the engine will be made in the course of a few days on the Newcastle tramways. The engine has been examined and approved of by Major-General Hutchinson, the Inspector for the Government.

There are good accounts from the lead mining districts in Teesdale. Stocks of pigs are being reduced, and good parcels of lead are sent away monthly. This is a very lucky circumstance for the present shareholders, many of whom have only recently bought their shares. The original shareholders some time ago despaired of success, and a large number of them sold out. The chemical trade continues good. Shipments go steadily forward, and there are no stocks in manufacturers' hands. The value of all chemicals is well sustained, with a rising tendency.

The iron trade continues to improve, in every quarter there is a demand for finished iron of all classes. Makers now demand 45*s.* per ton for No. 3 pig metal. Ship-plates are now 7*s.* 12*s.* 6*d.*; bars, 6*s.* 10*s.* Iron shipbuilders on the Tyne, Wear, and Tees are getting busy, and engine-builders and founders are getting more orders. Most of the large iron and engine works in Gateshead are improving, at Hawks Works large orders have been received for angle-iron, &c. At Abbot's Works there is also considerable improvement in most branches of this extensive concern, and at Black Hawthorn Works orders have been received this week for several large marine engines and boilers. On the north side of the Tyne, too, there is an increase of work at many of the engine works and foundries; on the whole, it is evident that trade generally is improving in this district, although the movement is slow, and coal and fuel trades must improve proportionately.

There was a good attendance on Change at Middlesborough on Tuesday, and there was a considerable improvement in prices, although the amount of business transacted was not extensive. All the works which are in operation are busy. During the next few months it is hoped and believed that all the manufactured ironworks in the North of England will again be in full swing. The Moor Ironworks, at Stockton, will, it is expected, soon be re-started, and arrangements are being made for the re-commencement of the Norton Ironworks, near Stockton. Engineers and ironfounders have not received so many inquiries lately. Shipbuilders on the Tees are much fuller at work. At Middlesborough Messrs. R. Dixon and Co. are building five steamers, and have now in their employment about 1000 hands. Both the shipyards at Stockton have better prospects. A scheme is under consideration for floating a company to take over the works of Messrs. Hopkins, Gilkes, and Co., at Middlesborough.

A general meeting of the North of England Institute of Mining and Mechanical Engineers will be held on Saturday. Some new members will be elected, and the following papers read:—"On Boiler Accidents and their Prevention," Part III., by Mr. D. P. Morrison; "On the Extraction of Ammoniacal Liquors from Coke Ovens," by Mr. Henry Aitken. The following papers will be open for discussion:—"On an Improved Expansion Gear for Winding Ets-

gines," by Mr. John Daglish; "On Condensation in Steam-pipes," by Mr. H. J. Bird.

The returns of the Cleveland Ironmasters' Association show that the revival in the iron trade of the district is well maintained. There are 165 blast-furnaces in the district, of which 93 are in operation, and 72 are out or damped down. The total make of Cleveland pig-iron for the port of Middlesborough during November was 119,100 tons, as compared with 118,931 tons in October, the make for the whole district being 144,519 tons, while the make for October was 141,851 tons, being an increase during the past month of 2668 tons. The total make of other kinds of iron, including hematite and spiegeleisen, was 24,839 tons, while the total make for October was 22,233 tons. The total make of all kinds of iron during November was 169,358 tons, the total for the previous month being 164,084 tons, thus showing an increase in favour of November of 5274 tons.

SOUND INVESTMENTS.

CANADIAN RAILWAYS.—The time has now arrived when those who have found the money for constructing Railways in Canada, which have tended more than anything else to develop her great resources, should insist upon receiving the adequate reward to which their enterprise is entitled. This would be easy of attainment if those who are charged with the administration of these important Railways exhibited a more friendly spirit towards each other. It is just possible that events now maturing may tend to bring about that fusion of interests which has been so long desired.

GRAND TRUNK OF CANADA.—Subsequent to the issue of my Circular last month, a considerable advance took place in all the securities of this Railway, but, notwithstanding the improvement recorded, when quotations were at their best, they were far below the prices ruling a few years ago. The fact is, the stocks of this Railway are in the hands of 9000 proprietors, nearly all of whom have held on tenaciously throughout the whole of the dull period, and now that the prospects of the future are so much more cheering, they exhibit a desire to increase rather than decrease their holdings. The recent advance has been due to the spread of this feeling, and the attraction of new and *bona fide* investors rather than the speculative action to which some have attributed it. There is no doubt that to those who have now the means available to take up stock and hold until the spring of next year, a handsome profit will result, but the mere speculator who buys "from account to account," expecting dealers to find the capital for the indigence of his gambling proclivities, must not complain if markets do not immediately favour him. I see no reason whatever for doubting that before very long the prices current in 1874 should be more nearly approached. In that year the quotations were as follows:—1st preference, 77; 2nd preference, 67½; 3rd preference, 37½; and ordinary stock, 21½.

When it is considered that the traffic receipts in 1874 amounted to 1,129,081, and that the year 1878 produced a total of 918,522, it will be seen that the present period need only show an increase of \$698 per week before approximating to the level of 1874, which was a period of great depression in Canada, and when the whole trade of the country was disorganized in consequence of the American panic in 1873. Now, as the traffic receipts published in the past month showed an average weekly increase of 5110/, and this at a time when trade is only beginning to exhibit an improvement, it is surely not extravagant to look for a speedy return to the required increase of 8000/ per week, to place the railway in exactly the same position as in 1874, when the above quotations existed. (Some weeks recently have been within 1500% of the amount named.) There is no doubt that great prosperity is dawning upon Canada, and in view of this fact, such an increase in the traffics will undoubtedly soon be witnessed, especially as the rates are higher and susceptible of much further advancement, there being so much variety in the country that there is no need for competition. The opening of the new line to Chicago next week, must also give a further impetus in the same direction. As the increase in the receipts this half year are mainly due to the higher rates, they will be earned with scarcely any extra expense, and thus nearly the whole increment will be net profit.

GREAT WESTERN OF CANADA.—The return of the President and his colleagues from America has been looked forward to by the Proprietors with intense interest, nor is this surprising remembering the halo of mystery which, at the Meeting in October last, was thrown over his projected plans. Armed with the unlimited power which the confidence of the Shareholders extended to them, the deputation from the Board have visited Canada and the United States to secure some extraordinary advantages from new American alliances. After two months' absence they have returned, and the only result of the negotiations with the late President stated "he knew to be of the greatest delicacy and importance," is embodied in a miserable pamphlet just issued under the lofty title of a "Special Report." After the most careful perusal of this document, I fail to see what the deputation has secured for the Shareholders which could not as readily have been obtained by the Company's representative in Canada. Shareholders should make a great effort to attend the Meeting on Thursday next.

MEXICAN RAILWAY.—In referring to this Railway in my Circular last month, I partly based my favourable anticipations of the future on the saving of interest to be effected by the consolidation of the existing 7 and 8 per cent. Debenture Bonds, and the issue in lieu thereof of a 6 per cent. Debenture Stock. It would now appear, from the correspondence which has taken place in the public papers, that it is not only in contemplation to reduce the interest, but to make the new Debenture Stock a permanent one, by which a further amount of 110,000/-, now applied annually to the Sinking Fund, would be set free for the benefit of the Shareholders. The success of such a consolidation is virtually assured, as the holders of the present Bonds cannot expect to see them quoted above par, owing to their being constantly drawn for repayment and the Company possessing the right to call them in at three month's notice. On the other hand, a permanent 6 per cent. Debenture Stock of such an improving property would at once command a premium and steadily increase with the development of the Railway.

On the assumption that this arrangement will be carried out, I estimate that if next year an addition of only 25,000/- net revenue is earned, the saving of interest and sinking fund accomplished by such a consolidation of the Debenture Bonds will enable the first and second Preference Shares to be paid the 8 per cent. and 6 per cent. interest in full, and leave a surplus for the Ordinary Shareholders. The estimate of a net increase of 25,000/- to the revenue is by no means extravagant, as the past three years have produced an average augmentation of 67,123/- gross, which was earned with scarcely any increase in the working expenses. (In 1878 for instance, when the increase of receipts was 38,669/-, the working charges were actually 12,344/-, or 6 per cent. less than in 1877.) The continuance of only the same rate of improvement would give a dividend to the Ordinary Shareholders every year rising to 4 per cent. in 1883, and thus to an investor at to-day's quotations of 6/- for the 20/- fully paid share, the yield would then be 16 per cent.

The meeting will be held in about three weeks, to receive the accounts to the 30th of June last. The great improvement in the position of this company has taken place since then, but I think the report and accounts about to be issued will be the most satisfactory ever submitted to the shareholders.

LONDON, CHATHAM, AND DOVER RAILWAY.—Some little disappointment has been felt, owing to the traffic returns during the past few weeks not having come up to expectation. From an analysis of the receipts it will be seen that while there has been a loss on goods (no doubt attributable to the deficient exports of hops, fruit, and vegetables) there has been a considerable development on the Metropolitan lines. The effect will become more apparent in the future as the receipts will compare with the period of exceptional depression. Notwithstanding the falling off in the current half year's receipts, as compared with 1878, when the Paris Exhibition was open, preference shareholders may, I think, fairly calculate on a dividend at the rate of 4 per cent. per annum in February next.

TRAMWAYS.—It is somewhat anomalous that, while during the prolonged period of stagnation, under the weight of which the whole community were suffering, the market for Tramway securities should be conspicuous for its vitality and strength; that now, when a general improvement is being manifested, it should have relapsed into an opposite position. The traffic receipts for many months of the current year were, no doubt, very disappointing; but it must be admitted that they were attributable to wholly exceptional causes, and when it is remembered that during the same period all Railways were relatively suffering more severely from the same cause, and yet these stocks are now at greatly advanced quotations, the contrast of reduced prices for Tramways is significant and remarkable. The explanation of this is that investors in English Railways are now buying for the future, and, by a parity of reasoning, it may be asked why should not similar attention be directed to Tramways? While at the present time buyers of both Railways and Tramways should be encouraged by the more hopeful aspect and general activity of trade, which necessarily involves increase of traffics, investors in Tramways have an additional stimulus, which those who limit their attention to Railways do not possess. The all-important subject of the adoption of the use of steam is now, day by day, emerging from its hitherto merely experimental position to one of absolute reality.

BORDEAUX TRAMWAYS AND OMNIBUS COMPANY.—The Prospects of this Company will be issued in a few days, and I commend it to the careful attention of those who seek a really good investment in property of this class. The result of my investigations during two visits to the city of Bordeaux convinces me that it is admirably adapted for the economical working of a combined system of Tramways and Omnibuses, as all the necessary elements to assure this are to be found here. It is one of the principal ports in France, there is a large, thriving and busy population, and the streets are wide and level. A great success for this Company is ensured, as it will enjoy the absolute monopoly of the Tramway and Omnibus traffic. This is a privilege, the value of which it is impossible to over estimate. It will be seen that the existing service of Omnibuses now belonging to this Company, although by no means perfect or complete, is taking a gross traffic of nearly 10000/- per week. A large amount of material for the construction of the Tramways has already been delivered, and the works are exciting much interest amongst all classes. I have every reason to believe there will be a considerable local demand for the shares, as property of this class, when under able English control, is much appreciated by French investors, as evidenced by the fact that they form a large proportion of the shareholders of the London General Omnibus Company.

TRAMWAYS AND GENERAL WORKS COMPANY.—Since I referred to this Company in my Circular for October there has been a steady demand for the shares, which have consequently increased in price. The buying has, no doubt, been encouraged by the knowledge of the valuable concession for Bordeaux which this Company has secured. The present quotation includes five months' accrued dividend, payable in February.

TELEGRAPHHS.—One of the most perceptible evidences of the revival in trade is afforded by the greatly improved traffic receipts of all Telegraph Companies. In consequence of this, business in these securities is becoming more active. The shares of the Eastern

and Eastern Extension Companies are just now in special favour. Both Companies are free from competition and pay a steady interest of 5 per cent., after amply providing for reserves. The shares being of the small denomination of 10/-, are very attractive to small investors. While the shares of these two Companies are quoted at about 8/- 15/-, thus yielding an investor 5½ per cent., it is strange that the 10/- fully paid Shares of the German Union Telegraph Company, which enjoys special privileges, should be quoted at 8/-, notwithstanding that 6 per cent. dividends are regularly paid, thus yielding an investor a clear 7½ per cent. These shares include the accruing dividend of 5s. 9d. for the current half year payable next month. Investors in Telegraph Securities will see that on the basis of the quotations for Eastern and Eastern Extension Shares, the German Union are worth 10/- 10s. per share.

MINES.—A very marked improvement in Mining Shares has taken place recently, due to the increase in the value of metals. I have always regarded such securities as a speculation into which none should enter who are not thoroughly prepared to face a loss. No doubt great "prizes" are to be drawn occasionally, but it is unfortunate that "blanks" so largely predominate. Mines producing metals of fluctuating values are, of course, the most risky, and are mainly responsible for the losses which are so frequently made. Gold, however, is not susceptible to that particular influence, the standard of value being always the same. The most brilliant successes in Gold Mining have been witnessed in California and Australia, and there is every probability that the valuable Gold deposits which exist in Southern India will now be opened out.

For this purpose a company has been formed under the title of the South Indian Gold Mining Company and, I think, the prospectus of this undertaking is well worth the attention of those who desire investments in such properties. Judging from the favourable opinions of well qualified authorities, this company ought to be very prosperous, and as it is launched under such favourable auspices, there is every probability of the shares soon commanding a handsome premium.

NEUCHATEL ASPHALTE.—I am afraid the patience of the Shareholders in this Company must be almost exhausted, in consequence of the delay in arranging the terms for the reorganization of the capital account. I am pleased, however, to state that it is probable before the close of this month an important step will be reached towards the attainment of this desirable object.

—From Mr. Wm. Abbott's Circular for December, 10, Tokenhouse Yard, London, E.C.

THE WEEK.

SATURDAY, NOV. 29.—The settlement having been concluded operators were left free to deal afresh, and the bidding for home railways was resumed. North British closed 1/- better at 83, but as the stock was carried over on Wednesday at 81½ further progress will be necessary before a profit can be shown on old shares. Erie securities were particularly strong. The shares bounded up to 86½, having opened 85 better. The Second Mortgage touched 92. Atlantic and Great Western Mortgage Bonds were exceptionally dull, both First and Second falling ½. In mining shares, those for copper were in marked request—such as Wheal Crebor, Devon Great Consols, Rio Tinto, New Quebec, and several others.

MONDAY.—The whole of Saturday's rise in Erie's was entirely lost owing to a heavy fall in New York. The ordinary shares fell 96, Preference 98, Second Mortgage Bonds 3½, and the Funded 3, closing prices being 840½, 870, 88, and 84. Atlantic and Great Western were also very dull, but the fall here did not exceed ½ to 2. New York Central shares fell 84½, and Reading shares 81½. Home railways were largely offered, closing at a considerable decline. Berwick, Dover, A, and Caledonian fell from 1½ to 2. Great Eastern, District, and North British fell 1. Royal Swedish Railway, 2½ to 3; Mexican, 4½ to 5½; Royal Sardinian, 6½ to 7; Lima, 5 to 5½; Lombard, 6½ to 7½. A rise of 5½ took place in London and County Bank shares. Nouveau Monde, ½ to 1½; Panulicillo, 4½ to 5; West Chiverton, 3 to 3½; Tankerville, 5½ to 6.

TUESDAY.—Home railways moved further downwards, though signs were not that as soon as the weak operators were weeded out prices would show a general recovery. The following fall 1½. —Dover, A, Midland, Great Western, and North British. At the close Great Eastern was obtainable at 59½, and Brighton, A, at 13½. A large business was done in Egyptian bonds at higher prices; Unified rose from 50½ to 51½. American stocks were again heavy, particularly such as Wheal Crebor, Devon Great Consols, Rio Tinto, New Quebec, and several others.

WEDNESDAY.—The railway traffics were considered good enough to induce some rather large buying, and prices improved all round. Brighton, A, rose from 13½ to 13½, and Metropolitan and Caledonian each improved 1½. York, A, from being 11½, closed at 12. The best traffic return was that issued by the London and North-Western, showing an increase of over 14,000. Foster, Porter, and Co., 17½ to 18½; London Steamboat, 6½ to 7. In mines Richmonds received marked attention, and finally touched 10, being a rise of 5%. Erie shares recovered to 94, and the Second Mortgage to 87. Atlantic and Great Western Mortgage Bonds were exceptionally dull—the Firsts were no better than 50% at the close.

THURSDAY.—The Cape Copper dividend (payable on the 24th Inst.) is to be one of 12s. 6d. per share, against 10s. per share given in September. Business was done early in the shares at 34½. Copper is particularly firm, and this induced buyers to give to-day 7 for Devon Consols, and 5 for Panulicillo. Ruby, 5 to 5½; Emma, ¾ to 5%; Rosa Grande, ¾ to 5%; West Chiverton, 2½ to 3%. The Atlantic and Great Western meeting was held to-day, and passed off satisfactorily. At one time the 1st Mortgage touched 49½, but soon recovered to 51. Districts rose to 81. Egyptian Unified and Preference were dull.

FRIDAY (Opening).—Consols have dropped ¾, to 97½, owing mainly to the introduction this morning of the large New Zealand 5 per cent. loan (\$5,000,000). Home railways are dull in sympathy. Brighton, A, has received to 132%. Egyptian Bonds are not much affected by the news of warlike preparations being made against Abyssinia, the Unified and Preference being only ½ worse. Grand Trunk stocks continue to be pressed for sale, the ordinary is now down to 14. Atlantic Firsts are now strong at 52 on yesterday's meeting. Wheal Crebor, 7½ to 8½; Eberhard and Aurora, 3½ to 3½; Nouveau Monde, ½ to 1½; East Caradon, 3 to 3½; West Chiverton, 3½ to 3½; Ruby, 4½ to 4½; Flagstaff, 1½ to 1¾; South Darren, 3½ to 3½; Leadhills, 4½ to 4½. —*Two o'clock.*—All the markets are particularly quiet, and in some departments business is almost at a standstill. Atlantic and Great Western Mortgage Bonds have lost a large portion of the rise shown at the opening. The First, after being dealt in at 53, are now but 51½ to 51½. Erie shares are 39½ to 40, and the Second Mortgage, 86½ to 87½. Egyptian Unified remain at 50½ to 50%; Cornwall Mineral Railway, 7½ to 8; Chillington Iron, 4½ to 5%; John Bagshaw, 1½ to 1½; Dartington Iron, 5½ to 6%; Earle's Shipbuilding, 14½ to 15; Palmer's Shipbuilding, 16½ to 17; Fellsall Coal, 14½ to 15. In home railways, Great Western have receded to 11½; Great Eastern to 59%; Midland 123, and North British to 81%. —*Four o'clock.*—The markets closed dull, but no material fall was recorded. Brighton, A, 13½ to 13½; British, 8 to 8½; Great Western, 11½ to 11½; Midland, 13½ to 13½; Atlantic First Mortgage, 50½ to 51; Reading shares, 85½ to 86%; Pennsylvania, 85½ to 85%; Great Western of Canada receded to 11; Grand Trunks Firsts being 65½ to 65%; and the Ordinary 13½ to 14%; Leadhills, 4½ to 5; Tankerville, 6 to 6½; Pandora, 10½ to 20s.; Marke Valley, 1½ to 1½; Chapel House Colliery, 1½ to 1½; Cardiff and Swansea, 1½ to 1½.

FERNAND KIRK.

REPORTS FROM NEWCASTLE-ON-TYNE.

NEWCASTLE-ON-TYNE STOCK EXCHANGE.—Messrs. SPENCE and IRWIN, stockbrokers (Dec. 4), write.—Our local market has been quieter this week, except in some of the iron shares, for which there continues to be a good demand on the whole. Chemical shares are easier upon the duller condition of the trade. Mining shares, too, are duller than the rise in the price of lead would warrant, but the small amount of capital of most of our mines makes them very sensitive to purely local causes. Bede Metal shares remain firm at 1d.; very little business, however, is doing in them, for as yet nothing is publicly known as to the result of the visit of two directors to Spain respecting the purchasing of a mine, the contract with the Tharsis Company for the supply of ore expiring shortly. Bolckow, Vaughan, and Co.'s shares are better, now being 13 to 15 prem. for A, and 38 to 39 for B. We have to record a further rise in Consett Iron shares; 13½ prem. is bid without finding sellers. At 14 prem. probably business could be done. Consett Spanish Ore shares have been done this week at 23s. 9d., being a shade below last week's quotation. Hopkin's, Gilkes, and Co.'s shares are inquired for at 2½, sellers ask 2½. 10s.; there is every probability of this company being taken out of liquidation. John Abbott and Co.'s shares continue in strong demand, no sellers; nominal price 25 to 20 dls. West Cumberland Iron and Steel shares continue rising, 6 dls. being now bid. Newcastle Chemical Works shares are freely offered at 4½, without finding buyers. The chemical trade is very flat just now, hence the fall in these shares.—Crook Burn Mine: Water having broken out in this mine offers are wanted for the shares without meeting with any response.—Duby Syke Mine: 17s. 6d. paid shares have been done this week at 8s. 6d. each, and are still offered at that price. The 20s. paid shares are offered at 8s. 6d. each.—Green Hurst Mine: Business has been done this week at 41. 15s.; price now 41. 15s. to 42. 7s. 6d. The report continues very good, with every prospect of this being a dividend mine for some years to come.—Teesdale Mine: A large number of these shares have changed hands at 6s. 6d. (ordinary), and 7s. (preference) each, and business could still be done at these prices. The transfer of these shares from Newcastle to Durham shareholders still continues, and the future management of the mine will depend on the extent to which this is carried.

Messrs. J. S. CHALLONER and SON, Stock and Share Brokers (Dec. 4) write.—The reports of Messrs. Cain and Vipond on the Teesdale Mining Company are now issued, and we consider them more satisfactory than was expected, and consider that the shares are cheap at the present price—8s. 9d. per share for ordinary, and 7s. per share for preference shares. Orders to buy are still coming from Durham, and there is now no seller of ordinary shares, but preference are offered at the above price. Crook Burn Mining Company has now stopped its workings until the spring, on account of there now being more water than they can at present keep down. Green Hurst is flat at 4½, and Duby Syke at 8s. 6d. for the fully paid, and 8s. 6d. for the 17s. 6d. paid shares—no buyers of either to-day. Bolckow, Vaughan, and Co. are very firm, and look like going higher. Consett Iron are very firm at 14 prem., few buyers and no sellers. Darlington Iron is now 9 dls., buyers. West Cumberland Iron is now 6 dls., buyers, and no sellers. Newcastle Chemicals are lower on weaker prices in the chemical trade; we expect to see these shares lower during the next few weeks. There is little or no change in other shares. Mr. Cain concluding his report, stated that the Teesdale Mine is not an expensive place for timber nor wailing and arching, and no materials are required beyond those now on the works to keep the west end forehead in advance, which is fast approaching an east and west vein, which in all probability will enrich the mine, also the prospect of the price of lead advancing would soon enable them to pay a dividend. Mr. W. Vipond reports that his opinion is that payable ground will be found going north in Holmes's level and above it, and he thinks that some of the cross veins will come together in depth,

and the sandy limestone and whinsill are more likely (the latter particularly) to prove richer than the thin limestones and hazles above which often check against plate or shale.

REPORTS FROM CORNWALL.

CORNISH MINES SHARE MARKET.—Mr. JOHN CARTER, Camborne (Dec. 4), writes.—A large business has been transacted in the Cornish Mine Share Market during the past week, but the advance in prices which took place at the close of last week, on the rise of the Tin Standards of 4s. per cwt., has again been lost, and closing prices to-day are below those of last week. The fall is due to the decline in price of tin of 5s. per ton in the London Market. Closing prices annexed.—Blue Hills, ¾ to 1½; Cook's Kitchen, ¾ to 1½; Carn Brea, 5s to 5½; Dolcoath, 5½ to 5½; East Caradon, 3½ to 3½; East Lovell, 2½ to 2½; East Pool, 20 to 20½; Killifreth, ¾ to 1½; Mellanear, 4 to 4½; New Cook's Kitchen, 5½ to 6½; Penhalls, 1½ to 1½; South Condurrow, 12½ to 13½; South Crofty, 4 to 4½; South Frances, 10 to 10½; Tincroft, 15½ to 16; West Bassett, 10½ to 11; West Frances, 11½ to 12½; West Peevor, 5½ to 6½; West Seton, 45 to 47; West Tolgus, 24 to 25; West Chiverton, 3 to 3½; Wheal Agar, 8 to 8½; Wheal Bassett, 3 to 3½; Wheal Grenville, 5 to 5½; Wheal

IMPORTANT NOTICE.

IN ACCORDANCE with the "Explosives Act, 1875, Section 77, all occupiers of Factories, Magazines, Stores, and Wharves shall post up NOTICES warning trespassers of their liability to penalties under this Section. Unless such notices are posted up occupiers are liable to a HEAVY PENALTY under this Section.

Speedy applications should be made for notices complete, complying with all the requirements of the said Act, and may be obtained from JOHNSON AND CO., Dynamite Agents, Dudley.

TO THE SHAREHOLDERS OF THE UNITED VAN CONSOLS AND GLYN LEAD AND BARYTES MINING COMPANY (LIMITED).

THE DIRECTORS HEREBY GIVE NOTICE that, in consequence of the Progress of the Mining Operations being in every way satisfactory, and the Number of Applications for Preference Shares so large, they cannot RECEIVE APPLICATIONS for such shares at par after 31st December next. JAMES COOPER, Secretary.

No. 3, Coleman-street Buildings, 25th November, 1879.

ROMAN GRAVELS MINING COMPANY (LIMITED).

Notice is hereby given, that the Directors have THIS DAY DECLARED a DIVIDEND of £3000, free of income tax, being FIVE SHILLINGS PER SHARE on the 12,000 shares of the company, PAYABLE on and after the 11th instant, to the shareholders now on the books of the company.

By Order, F. F. WILSON, Secretary,

30, Finsbury-circus, London, E.C., 3rd December, 1879.

THE CAPE COPPER MINING COMPANY (LIMITED).

Notice is hereby given, that at a MEETING of the Directors of this Company, held to-day, it was resolved that a DIVIDEND of TWELVE AND SIXPENCE PER SHARE, free of income tax, be and is hereby DECLARED, PAYABLE on the 24th day of December instant to the shareholders on the books of the company on the 13th instant; and the Transfer-books will be closed during the said 13th instant.

By order of the Board,

J. C. LEAVER, Secretary.

No. 6, Queen-street-place, London, 3rd December, 1879.

PONTGIBAUD SILVER-LEAD MINING AND SMELTING COMPANY.

Notice is hereby given, that at the Ordinary General Meeting, held in Paris on the 29th ultimo, the DIVIDEND for the year 1878-1879 was fixed at TWENTY-FIVE FRANCS PER SHARE.

The sum of 10 francs per share was paid on account of the same on 5th June last, and the balance of 15 francs per share will be paid in exchange for the No. 2 Coupon on and after the 5th instant at the offices of the company, No. 15, Rue de Chateaudun, Paris, or at the London Agency, No. 5, Queen-street-place.

The payments made in England for such balance of Dividend will, after allowing for French tax and exchange, be at the rate of 10s. 9d. per share, subject to the deduction of income tax.

JOHN TAYLOR AND SONS.

London Agency : 5, Queen-street-place, E.C., 3rd December, 1879.

VIRNEBERG COPPER MINING COMPANY (LIMITED).

Notice is hereby given, that the ORDINARY GENERAL MEETING of the shareholders in the given, that the ORDINARY GENERAL MEETING of the shareholders of the company, 5, Knightrider-street, Doctors' Commons, in the City of London, on TUESDAY, the 16th day of December, 1879, at Twelve o'clock noon, to receive the report of the directors and the statement of accounts, to elect directors and auditor, and for the general business of the company.

The Transfer-Books will be closed from the 6th to the 16th day of December, 1879, both days inclusive.

By order of the Board,

T. R. CLARKE, Secretary.

5, Knightrider-street, Doctors' Commons, December 6th, 1879.

TO CAPITALISTS, PROMOTERS, INVESTORS, &c.

A MINING ENGINEER of large experience in the WEST OF ENGLAND is in a position to obtain VALUABLE MINERAL GRANTS for clients on easy terms, and to INTRODUCE PROGRESSIVE PROPERTIES requiring very little additional expenditure to enable considerable returns to be made. With improved trade large profits are certain.

Address, "C.E., F.G.S.", MINING OFFICE, 26, Fleet-street, London.

TO PARENTS AND GUARDIANS.

A N ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and obtain knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.

HERBERT C. JONES,

Canada Land and Loan Agency.

32, Wellington-street, Toronto.

TO MINERAL AND METAL MERCHANTS, CHEMICAL MANUFACTURERS, &c.

A GENTLEMAN (37), with many years' commercial experience, and accustomed to travel among Iron, Coal, Tin-plate, Chemical, and Manure Works, DESIRES to REPRESENT A GOOD FIRM dealing in requirements for above class of works. First-class references.

Address, "P. P.", care of Housekeeper, 83, Upper Thames-street, City.

S Y N D I C A T E .

THE ADVERTISER asks the CO-OPERATION of small capitalists for the PROMOTION of a PUBLIC COMPANY, and the full development of his valuable invention connected therewith, which is already practically at work upon a small scale, and daily winning popular favour. Liberal share of the profits—£10 for each £5 advanced, and a valuable free interest in the undertaking.

Ful particulars, which are most interesting, from "Veritas," 63, Dalberg-road, Brixton, London, S.W.

VALUABLE FREEHOLD COLLERY WITH COAL AND IRONSTONE MINES.

TO BE SOLD, either the WHOLE or PART of LESSOR'S INTEREST in a LARGE FREEHOLD COLLERY in one of the North Midland Counties, also a LARGE AREA of LEASEHOLD COAL, with power to work thereon as much as possible during eleven years, without any further payment to Lessor.

The coal is of high repute in the London and Southern Markets, and the plant is powerful and efficient, and included in the Lessor's interest, and is capable of raising a minimum of 4000 tons of coal per week. There is ample siding accommodation in connection with the Midland Railway Company's Main Line to London.

The Advertiser would be prepared to CO-OPERATE with the PURCHASER in WORKING the COLLERY, finding his proportion of Capital for such purposes.

For particulars, apply to Messrs. J. and P. HIGSON, Civil and Mining Engineers, 18, Crown Buildings, Booth Street, Manchester.

GYPSUM AND LIMESTONE.

THE OWNER of an ESTATE in SUSSEX, under which there is a considerable bed of GYPSUM and LIMESTONE, will be willing to ENTER INTO ARRANGEMENTS with PARTIES OF STANDING, who would UNDERTAKE THE WORKING THEREOF, either in shares or on a royalty.

The adjoining property is now in work, and the kilns and machines in action, and a branch railway connected with the South Eastern Railway.

For further particulars, apply to J. C. MAPPIN, Broadfield, Reigate.

PIT SINKING, WINDING COAL, PUMPING, &c.

PORTABLE STEAM ENGINE FOR SALE, with two 134-inch cylinders, fitted with link-motion reversing gear, large boiler, with or without road travelling wheels, and winding and pumping gear.

Also a double 9½-in. cylinder PORTABLE ENGINE.

A 9½-in. cylinder VERTICAL ENGINE, with winding drum, complete.

An 8-in. cylinder VERTICAL HOISTING ENGINE, with winding drum complete. To be seen at—

BARROES AND STEWART'S WORKS, BANBURY, OXON.

FOR SALE, a NEW 70 in. cylinder CORNISH BEAM PUMPING ENGINE, 10 ft. stroke in cylinder and 9 ft. in the shaft, with steam case, metallic piston, and wrought gudgeon. The false cover, perpendicular pipes, weigh posts, working and nozzle gear all fitted bright. A strong substantial well made engine, complete, including cast-iron easings for top and bottom nozzles with bright covers, holding down bolts and wrought-iron caps and bolts for connection to main rod.

Apply to WILLIAM'S FERREY FOUNDRY COMPANY, Perranporth, Cornwall.

Dated Jan. 29, 1879.

FOR SALE, at NEW PEMBROKE MINE, CORNWALL:—

An excellent 25 in. DRAWING ENGINE and TWO BOILERS.

TWO SPARE BOILERS.

THREE IRON STAMPS AXLES.

100 fathoms FLAT RODS, 3½ in.

10 arm CAPSTAN IRON AXLE.

A quantity of ROD PLATES and OTHER MATERIALS.

Apply to Mr. JOHN POLKINGHORNE, Woodlands, Par Station.

M R. CHARLES POWELL, 11, WARMFORD COURT, THROGMORTON STREET, advises the PURCHASE of EAST CREBOR shares at £1 2s. 6d. to £1 7s. 6d. This is the adjoining mine, and on the identical rich lodes as Wheal Crebor, the shares in which mine have advanced during the last six months from 5s. to the present price—£7 15s. to £8 5s. It is not generally known that East Crebor has produced some of the richest yellow copper ore in England, one parcel of which realised the high price of £26 15s. per ton.

Mr. POWELL has business in EAST CREBOR shares as buyer or seller.

IN LIQUIDATION.
IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867, AND
IN THE MATTER OF THE ST. HARMON LEAD MINING COMPANY (LIMITED).

TOB BE SOLD, BY PUBLIC AUCTION, at the Mart, Tokenhouse Yard, London, on the 15th day of December, 1879, at Two o'clock, p.m., by Mr. J. M. KLENCK, by Order of the Liquidators of the above-named Company, the LEASE of the

ST. HARMON LEAD MINE,

Situate at TWLCH, near LLANIDLOES, in the county of MONTGOMERY, WALES.

Also the VALUABLE PLANT and MACHINERY, as per Inventory, which will be produced at the time of sale.

The property is open for inspection. The lease can be seen at the offices of Mr. ALEXANDER KERLY, 14, Great Winchester-street, London (of whom conditions of sale and an Inventory of Plant and Machinery can be obtained), Solicitor to the Liquidators; also of the Auctioneer—

MR. J. M. KLENCK, Auctioneer,

4, Bishopsgate-street Without, London.

NORTHAMPTONSHIRE.

THE WOODFORD HOUSE ESTATE,

For many years the seat of the late General ARBUTHNOT.

A HIGHLY IMPORTANT FREEHOLD (and small part LEASEHOLD) RESIDENTIAL PROPERTY of upwards of 700 acres, possessing great mineral value, adjoining TWYWELL, and within a mile of CRAUFORD, both having Stations on the Huntingdon Branch of the Midland Railway, three miles from the Market Town of Thrapston, which has stations on the Midland and London and North-Western Railways, and seven miles from Wellingborough. The Estate is of an undulating character, intersected by good roads. It includes a FAMILY RESIDENCE, occupying a pleasing site, overlooking a timbered Park, surrounded with well grown plantations, interspersed with walks, tastefully arranged pleasure grounds, capital walled Kitchen Garden, Greenhouses, Stabling, small Farmery, &c. There are two good Farmhouses, with suitable homesteads, also accommodation land and Cottages in the thriving village of Woodford. Some of the richest beds of IRON ORE and LIMESTONE underlie the greater portion of the Estate, parts of which are now being worked, and it is believed there is no district where these minerals can be found under more favourable circumstances, or put into the market at a cheaper rate. There are private rails and tramways on the property connecting it with the Midland Railway by sidings at Twywell.

MESSRS. FAREBROTHER, ELLIS, CLARK, AND CO. are instructed to OFFER the ABOVE VALUABLE ESTATE FOR SALE, BY AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on Wednesday, the 28th January, 1880, at Two o'clock precisely.

Particulars, with plans and conditions of sale, may shortly be obtained of

Messrs. WALTERS, DEVEREUX, and WALTERS, 9, New Square, Lincoln's Inn, W.C.;

Messrs. HEMSLEY and HEMSLEY, 5, Albany Court Yard, Piccadilly, W.; Messrs. FABER, OUVRY, and Co., No. 66, Lincoln's Inn Fields, W.C.; Messrs. GREEN and CHEESE, No. 2, Warwick Street, Charing Cross; Mr. S. PICKETT, at the Iron-works Office on the Estate; at the Mart, and with orders to view of T. H. BURROUGH, Esq., 30, Lincoln's Inn Fields, W.C.; and of Messrs. FAREBROTHER, ELLIS, CLARK, and CO., of 6, Lancaster Place, Strand, W.C., and 18, Old Broad Street, E.C.

PRELIMINARY ANNOUNCEMENT.

STOBECROSS DOCKS CONTRACT, GLASGOW.

M R. ARTHUR T. CROW, Contractors' Auctioneer, Manor House, Sunderland, has received instructions from John Jackson, Esq., owing to completion of contract, TO SELL BY PUBLIC AUCTION, the WHOLE of the VALUABLE CONTRACTORS' PLANT and MATERIAL, Powerful STUD of DRAUGHT HORSES, CARTS, and HARNESS.

Date of sale and further particulars in future advertisements, and catalogues obtained at the place of sale and at the office of the Auctioneer, Sunderland.

BY ORDER OF THE TRUSTEES OF THE LATE JAMES RADLEY.

TOB BE SOLD, BY PRIVATE TREATY, the well-known POCKET NOOK COPPER SMELTING WORKS, at STE. HELEN'S, LANCASHIRE.

The premises consist of about 2½ acres of land, nearly all freehold. The works, which are in excellent repair, are very complete, and consist of TEN SMELTING and ROASTING, ONE REFINING, and ONE CALCINING FURNACE, with substantial PLANT, WEIGHING MACHINES, RAILWAY WAGONS, STEAM GRINDING MILL, &c., &c., capable of doing an extensive business.

The offices, laboratory, refinery, smithy, and store rooms are ample and convenient, and the property has the advantage of railway sidings and canal and road frontage, with seven cottages adjoining.

The brand is well known on the market, and the connection is of the highest respectability.

The stock and current contracts may be taken at a valuation to suit the convenience of a purchaser.

Applications to be addressed to Mr. D. McCOLL, at the works.

IN VOLUNTARY LIQUIDATION UNDER THE COMPANIES ACT, 1862.

THE NEW LLANGYNOG LEAD MINING COMPANY (LIMITED).

TOB BE SOLD, BY PRIVATE TREATY, ALL the BENEFICIAL INTEREST of the New Llangynog Lead Mining Company (Limited) in the Llangynog Lead Mines, comprising all the valuable, productive, and extensive mines, veins, beds of lead, ores of lead, and other metals and minerals known collectively as the Llangynog Lead Mines, and in the reservoir, water-supply rights, easements, and interests thereto belonging, situate in the several parishes of Llangynog, Llanrhaidr-yn-Mochnant, Hirnant, and Pennant, in the county of Montgomery; and also the WHOLE of the movable PLANT and MACHINERY of the said company.

The Llangynog Lead Mines have been a highly productive and dividend-paying property.

The mines, machinery, and plant are in working order, and considerable quantities of ore are now being raised.

The works may be inspected at any time upon application to the Manager at the Mines. The leases and agreements may be inspected at the offices of Messrs. LONGEVILLE, JONES, and WILLIAMS.

All further information may be obtained, and maps of the property inspected, on application to Messrs. GEO. HASWELL and Sons, 84, Foregate-street, Chester, to HENRY DENNIS, Esq., Mining Engineer, Hafod-y-Bwch, Ruabon; or to Messrs. LONGEVILLE, JONES, and WILLIAMS, Solicitors, Oswestry.

TO CAPITALISTS.

TOB BE SOLD, BY PRIVATE TREATY, a LEAD MINE in the HALKYN MOUNTAIN. The mine is free from water, is in good working order, has a good amount of lead in sight, and can be worked with small outlay.

For further particulars, apply to Mr. J. SMALL, Queen's Park, Chester.

VALUABLE COPPER MINE,

SITUATED IN THE ENGLISH LAKE DISTRICT.

TOB BE SOLD, in consequence of the Death of the Principal, the above VALUABLE MINE, with

**ELLIS LEVER AND CO.,
BRATTICE CLOTH MANUFACTURERS,
WEST GORTON WORKS,
MANCHESTER.**

ESTABLISHED A QUARTER OF A CENTURY.

**M E S S R S . T O N K I N B R O T H E R S ,
M I N I N G A G E N T S , S U R V E Y O R S , A N D A S S A Y E R S ,
S T A N H O P E , D U R H A M .**

MINES INSPECTED AND REPORTED ON.

**M R . W I L L I A M B R E D E M E Y E R , M I N I N G , C O N S U L T I N G
A N D C I V I L E N G I N E E R , U . S . M I N E R A L S U R V E Y O R f o r U T A H a n d
I D A H O . N O T A R Y P U B L I C .**

Geological examinations; reports on mining properties; surveys mines, railroads, and canals, and superintends the workings of the same; prepares estimates and plans for opening and working mines. Expert on mining questions before the Courts.

Address, P.O. Box 1157, Salt Lake City, Utah.

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20000 Grogginion, t, Cardigan*	2 0 0 ..	4 ..	3 1/2 3 1/2 ..	0 14 10 ..	0 1 10 ..	Aug. 1878
2800 Isle of Man, t, Isle of Man*	25 0 0 ..	— ..	— ..	82 5 0 ..	0 10 0 ..	Feb. 1879
20000 Leadhills, t, Lanarkshire	6 0 0 ..	4 ..	4 1/2 5 1/2 ..	0 15 0 ..	0 3 0 ..	Mar. 1878
400 Lisburne, t, Cardiganshire	18 15 0 ..	35 ..	30 35 ..	599 10 0 ..	1 0 ..	Dec. 1879
10000 Mellanear Copper, Hayle*	2 0 0 ..	4 1/2 ..	4 1/2 4 1/2 ..	0 12 0 ..	0 2 0 ..	Nov. 1879
9000 Minera Mining Co., t, Wrexham*	5 0 0 ..	13 ..	11 13 ..	68 5 2 ..	0 2 0 ..	Nov. 1879
20000 Mining Co. of Ireland, cl, c, t	7 0 0 ..	— ..	— ..	23 17 6 ..	0 2 6 ..	Jan. 1878
883 North Buay, t, Chacewater	1 14 0 ..	5 ..	4 1/2 5 ..	1 0 0 ..	0 5 0 ..	Oct. 1878
11829 North Hendre, t, Wales	2 10 0 ..	7 1/2 ..	7 1/2 7 1/2 ..	3 2 6 ..	0 5 0 ..	Sept. 1879
8063 Ditto	1 0 0 ..	3 ..	2 1/2 3 ..	0 4 0 ..	0 2 0 ..	Sept. 1879
10000 Pant-y-Mwynn, t, Mold (8794 sh. iss.)	2 0 0 ..	— ..	— ..	0 3 0 ..	0 2 0 ..	Aug. 1878
6000 Pennant, t, bar, North Wales*	5 0 0 ..	5 ..	4 5 ..	0 10 0 ..	0 5 0 ..	Mar. 1878
18000 Prince Patrick, t, Holywell	1 0 0 ..	— ..	— ..	0 15 0 ..	0 6 0 ..	July 1879
12000 Ditto, pref. (8000 sh. issued)	0 10 0 ..	— ..	— ..	0 1 6 0 ..	0 6 0 ..	July 1879
10000 Red Rock, t, Cardigan	2 0 0 ..	2 ..	1 1/2 2 ..	0 4 0 ..	0 2 0 ..	Jan. 1878
12000 Roman Gravels, t, Salop*	7 10 0 ..	11 1/2 ..	11 1/2 12 1/2 ..	8 10 0 ..	0 5 0 ..	Dec. 1879
512 South Cadron, c, St. Cleer	1 5 0 ..	75 ..	75 85 ..	744 10 0 ..	1 0 ..	Nov. 1878
6123 South Condurrow, t, Camborne	6 5 6 ..	15 ..	12 13 ..	5 17 0 ..	0 10 0 ..	Aug. 1879
4500 South Wheal Frances, t, Illogan†	7 12 4 ..	12 1/2 ..	11 11 1/2 ..	39 9 6 ..	0 15 0 ..	Dec. 1879
12000 Tankerville, t, Salop*	6 0 0 ..	5 1/2 ..	5 1/2 6 1/2 ..	4 17 6 ..	0 5 0 ..	Jan. 1877
6000 Tincroft, c, t, Pool, Illogan†	11 10 0 ..	16 ..	15 1/2 16 1/2 ..	50 8 6 ..	0 5 0 ..	May 1877
15000 Van, t, Llandidloes*	4 5 0 ..	23 ..	22 24 ..	24 0 6 ..	0 5 0 ..	July 1879
3000 West Chiverton, t, Perranzabuloe*	17 5 ..	15 1/2 ..	15 1/2 16 1/2 ..	55 10 0 ..	0 10 0 ..	Feb. 1878
512 West Toliogus, t, Redruth	95 10 0 ..	25 ..	25 27 1/2 ..	33 0 1 ..	0 1 0 ..	Jan. 1879
600 West Wheal Seton, t, Camborne†	51 0 0 ..	50 ..	45 50 ..	446 0 0 ..	0 15 0 ..	Apr. 1878
1024 Wheal Eliza Consols, t, St. Austell	18 0 0 ..	— ..	— ..	27 10 0 ..	2 0 0 ..	Oct. 1879
3000 Wheal Peevor, t, Redruth	7 11 0 ..	21 ..	18 19 ..	2 8 6 ..	0 16 0 ..	Oct. 1879

FOREIGN DIVIDEND MINES.

	Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.		
35500 Alamillos, t, Spain†	2 0 0 ..	2 ..	1 1/2 2 ..	1 19 9 ..	0 0 6 ..	Oct. 1878		
30000 Almada and Trifio Consol., *†	1 0 0 ..	1/2 ..	1/2 1/2 ..	6 3 ..	0 1 ..	May 1876		
20000 Australian, t, South Australiat	7 7 6 ..	2 ..	1 1/2 2 ..	1 3 6 ..	0 2 0 ..	Aug. 1879		
20000 Cape Copper Mining, *† South Africa	7 0 0 ..	34 ..	33 35 ..	36 10 0 ..	0 12 6 ..	Dec. 1878		
35000 Cesena Sulph. Co., Romagna, Italy*	10 0 0 ..	— ..	— ..	0 19 0 ..	0 1 ..	Aug. 1879		
10000 Copiapo, c, Chile* (£20 shares)	16 15 0 ..	— ..	— ..	7 11 5 ..	0 3 0 ..	May 1877		
23500 Eberhardt and Aurora, t, Nevada*	10 0 0 ..	33% ..	32 3/4 3% ..	1 8 0 ..	0 3 0 ..	Dec. 1877		
10000 English and Australian, t, B. Aust.	2 10 0 ..	1 1/2 ..	1 1/2 1/2 ..	2 17 9 ..	0 1 0 ..	Mar. 1879		
25000 Fortuna, t, Spain†	2 0 0 ..	5 1/2 ..	5 1/2 6 ..	7 6 5 ..	0 1 ..	Sept. 1879		
55000 Frontino & Boliva, g, New Gran.*†	2 0 0 ..	2 1/2 ..	2 1/2 2 1/2 ..	0 3 6 ..	0 1 0 ..	Feb. 1879		
15000 Linares, t, Spain†	3 0 0 ..	5 1/2 ..	5 1/2 5 1/2 ..	17 14 10 ..	0 2 0 ..	Sept. 1879		
10000 Pontigibaud, s-l, France†	20 0 0 ..	20 ..	18 20 ..	27 17 6 ..	0 10 6 ..	Dec. 1878		
10000 Port Phillip, c, Clunes* (42 shares)	1 0 0 ..	34 ..	34 ..	1 12 0 ..	0 1 0 ..	Mar. 1879		
54000 Richmond Consol., t, Nevada*	5 0 0 ..	9 1/2 ..	9 1/2 10 1/2 ..	7 16 6 ..	0 7 6 ..	Nov. 1879		
4000 Santa Barbara, t, Brazil	10 0 0 ..	2 1/2 ..	2 1/2 2 1/2 ..	0 8 9 ..	0 1 ..	Nov. 1879		
12000 Scottish-Australian Mining Co.*†	1 0 0 ..	2 1/2 ..	2 1/2 2 1/2 ..	15 1/2 ..	15 1/2 ..	May 1879		
80000 Ditto, New	10 0 0 ..	13 1/2 ..	13 1/2 13 1/2 ..	15 1/2 ..	15 1/2 ..	May 1879		
22500 Sierra Buttes, g, California*	2 0 0 ..	1 1/2 ..	1 1/2 1/2 ..	2 0 6 ..	0 1 ..	Apr. 1879		
40625 Ditto, Plumas Eureka	2 0 0 ..	2 1/2 ..	2 1/2 2 1/2 ..	2 7 0 ..	0 3 0 ..	Oct. 1879		
£253000 St. John del Rey* (£5 Stock and multiples dealt in)	270 280 ..	12 1/2 ..	p.c. for half-year, June 1879	10000 Victoria* (London), g, Australia	1 0 0 ..	36 36 ..	0 13 1/2 0 ..	7 1/2 June 1879
2500000 W. Prussian (5500 pref. sh. £10 pd.)	10 0 0 ..	10 1/2 ..	10 10 1/2 ..	1 14 0 ..	0 4 ..	Oct. 1879		

* Have made calls since last dividend was paid.

NON-DIVIDEND BRITISH MINES.

	Paid.	Last wk.	Clos. pr.
Shares.			
2560 Aberllyn, t, bl, Carnarvon	10 0 ..	0 ..	11 ..
12000 Asheton, t, Carnarvonshire*	5 0 ..	..	3/4 ..
11583 Bedford Univ., t, C. Tavistock [21 lab.],	0 4 ..	..	2/4 ..
30000 Bettws-y-Coed, t, l (20000 sh. issued)	1 ..	0 ..	1/2 ..
8000 Blaen Caolan, t, Cardigan	3 0 ..	0 ..	— ..
3939 Blue Hills, t, c, St. Agnes	4 6 ..	..	1 1/2 ..
30000 Bodidris, t, bl, Denbighshire	12 5 ..	0 ..	70 90 ..
10000 British, t, Wrexham	2 0 ..	0 ..	1 1/2 ..
256 Brownhelly, c, St. Neot	0 10 ..	..	1 1/2 ..
20000 Bwlch United, t, l (21 lab.)	12 ..	0 ..	3 3/4 ..
20000 Bodlack, t, c, St. Just	126 ..	0 ..	70 90 ..
10000 British, t, Wrexham	2 0 ..	0 ..	1 1/2 ..
50000 Cambrian, t, l, Cardiganshire	0 12 ..	..	3 3/4 ..
20000 Cen. Foxdale, t, l, I. of Man* (£2 sh.)	1 5 ..	0 ..	— ..
5120 Clementina, t, Llanrwst	1 ..	0 ..	1 1/2 ..
25000 Coed Mawr Pool, t, Carnarvon	2 0 ..	0 ..	— ..
7500 Combellack, t, l, Wendron	2 0 ..	0 ..	— ..
8000 Combe Martin, t, l, North Devon	0 8 ..	..	— ..
2450 Cook's Kitchen, t, Illogan†	27 4 ..	0 ..	3 1/2 ..
10000 Cornw. Great Cons., t, Callington	4 0 ..	..	3 1/2 ..
6400 Crook Burn, t, l, Cumberland	0 5 ..	..	— ..
14000 Crosswood Mining Lands, t, l	1 ..	0 ..	1 1/2 ..
15000 Cwm Brwyno, t, l, Cardigan	2 0 ..	0 ..	2 2 1/2 ..
15000 Cwm Dwyfor, t, l, Wales			